

- #977 **REDUCING THE NUMBER OF RABBITS IN EYE AND SKIN IRRITANCY TESTS.** S C Rodriguez, *W E Dalbey*, K M Wilkins and C B Cope. Environmental Health Sciences Laboratory, Mobil Oil Corporation, Princeton, NJ.
- #978 **EFFECTS OF CAGING DENSITY ON PARAMETERS MEASURED IN RAT TOXICITY STUDIES.** R Billington, D F Newton and R J Harling. Huntingdon Research Centre Ltd., Huntingdon, Cambridgeshire, UK.
- #979 **USE OF COVARIANCE ANALYSIS FOR UNCOVERING BODY WEIGHT EFFECTS.** J H Gillis, *J T Stevens* and *R F Potrepka*. CIBA-GEIGY Corporation, Greensboro, NC.
- #980 **STRAIN AND SEX DIFFERENCES IN PORPHYRIN EXCRETION RATES IN RATS.** C L Luckhurst, H A Davis, M A Bowers and J S Woods. Dept. of Environmental Health, Univ. of Washington, Seattle, WA.
- #981 **INFLUENCE OF INTRAVENOUS INFUSION RATES AND SOLUTION PH ON PULMONARY EDEMA IN CONSCIOUS RATS.** *D J Murphy*, M E Joran and C J Kotzer. SmithKline Beecham Pharmaceuticals, Dept. of Investigative Toxicology, King of Prussia, PA.
- #982 **CONTINUOUS INTRAVENOUS INFUSION IN FISCHER 344 RATS FOR SIX MONTHS.** *M J Vodcnik*, B L Hawkins, J A Cochran, P A Cross, J O Houchins, E L Russell, W D Johnson, and P C Francis. Toxicology Research Laboratories, Eli Lilly and Co, Greenfield, IN.
- #983 **CONTINUOUS INTRAVENOUS INFUSION IN BEAGLE DOGS.** R O Oshodi, P McDonald. Inveresk Research International Ltd, Tranent, Scotland, Sponsor: *A B Wilson*.
- #984 **PERITONEAL FLUID EXCHANGE IN BEAGLE DOGS USING A LIFECATH[®] PERITONEAL IMPLANT SYSTEM.** P McDonald and R O Oshodi. Inveresk Research International Ltd, Tranent, Scotland. Sponsor: *A B Wilson*.
- #985 **THE HAIRLESS GUINEA PIG AS A POTENTIAL MODEL FOR EVALUATING DERMAL SENSITIZATION BY AIRBORNE MATERIALS.** *J S Ferguson*, *N S Hatoum*, *D R Dutton*, and *J K Yermakoff*. IIT Research Inst. and Amoco Corp, Chicago, IL.
- #986 **NOVEL IN VITRO SYSTEM FOR THE ASSESSMENT OF TOXICITY OF VOLATILE COMPOUNDS.** N J DelRaso, *S R Channel*, D G Bartholomew, M J Walsh, and J A Kessler. Toxicology Division (OL-AL/OET), Armstrong Laboratory, WPAFB, OH.
- #987 **A NEW COMPUTER PROGRAM FOR EVALUATION OF PULMONARY MECHANICS IN MICE.** R D Thompson, R Vijayaghavan, *Y Alarie*, and *M Schaper*. University of Pittsburgh, Pittsburgh, PA.
- #988 **INCORPORATION OF AN ABBREVIATED FUNCTIONAL OBSERVATIONAL BATTERY (FOB) INTO SUBCHRONIC STUDIES IN RATS AND MICE.** R E Wilson, *S J Hermansky*, C A Ferry, *M W Gill* and *J Smith*¹. Bushy Run Research Center/Union Carbide Chemicals and Plastics Inc., Export, PA. and ¹University of Delaware, Newark, DE.
- #989 **MALE REPRODUCTION TOXICITY TESTING: A METHOD FOR THE EVALUATION OF RAT SPERM MOTILITY, MORPHOLOGY AND QUANTITY.** P Ridgeway. Toxicol Laboratories Limited, Ledbury, Herefordshire, UK. Sponsor: *J H Baillie*.
- #990 **A METHOD FOR THE ESTIMATION OF DNA AND RNA SYNTHETIC ACTIVITY IN SERTOLI-GERM CELL CO-CULTURES.** L M Shih and W W Ku. Developmental and Reproductive Toxicology Group, NTP/NIEHS, Research Triangle Park, NC. Sponsor: *R E Chapin*.
- #991 **ADVANCES IN THE USE OF THE FLUORESCENT PROBE FURA-2 FOR THE ESTIMATION OF INTRASYNAPTOSOMAL CALCIUM.** S L Yates¹, E N Fluhler, and P M Lippiello. ¹Duke University Medical Center, Integrated Toxicology Program, Durham, NC and RJR-Nabisco, Pharmacology Division, Winston-Salem, NC. Sponsor: *J D deBethizy*.
- #992 **TRACE LEVEL DETERMINATION OF CLENBUTEROL IN BIOLOGICAL SAMPLES USING ELECTRON CAPTURE DETECTION.** *C B Spainhour, Jr.* Dept. of Veterinary Anatomy & Public Health, College of Veterinary Medicine, Texas A & M University, College Station, TX.
- #993 **EXAMINATION OF MITOCHONDRIA EXPOSED TO 1,2-DIMETHYLHYDRAZINE USING ATOMIC FORCE MICROSCOPY AND OTHER TECHNIQUES.** C L A Nowlin, S Howells, D Sarid, *A J Gandolfi*. Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.
- #994 **RAPID FIELD-PRACTICAL DIAGNOSTIC ASSAYS FOR THE DETECTION OF FUMONISIN B₁, CYCLOPIAZONIC ACID, DEOXYNIVALENOL, AFLATOXIN AND MIXTURES OF THESE MYCOTOXINS.** G Y Hwang, B A Clement, Z Huang, K Mayura, and *T D Phillips*. Department of Veterinary Anatomy and Public Health, Texas A&M University, College Station, TX.
- #995 **AFFINITY PURIFICATION OF DIOXIN BINDING PROTEINS FROM LIVER CYTOSOL.** Y Tian¹, S Ke¹, L Trogen², C Rappe², J D MacMillan¹, and P C Kahn¹. ¹Rutgers University, New Brunswick, NJ, and ²University of Umea, Umea, Sweden. Sponsor: *K R Cooper*.
- #996 **PARTITION COEFFICIENT DETERMINATION FOR NON-VOLATILE AND INTERMEDIATE VOLATILITY CHEMICALS IN BIOLOGICAL TISSUES.** G W Jepson¹, D K Hoover¹, R K Black¹, J D McCafferty¹, D A Mahle², and J M Gearhart². Toxicology Division (OL-AL/OETA)¹, Armstrong Laboratory; METI², WPAFB, OH. Sponsor: *J W Fisher*¹.
- #997 **PARTITION COEFFICIENTS OF VOLATILE ORGANIC COMPOUNDS DETERMINED BY LIQUID SCINTILLATION COUNTING.** W D Crank. ManTech, RTP, NC. Sponsor: *R A Pegram*.

- #998 **DEVELOPMENT OF HIGHLY SENSITIVE ELISA FOR FLUPHENAZINE IN HORSES.** J M Yang, W E Woods, H H Tai, D S Watt and T Tobin. The Graduate Center for Toxicology, Department of Veterinary Science, Department of Chemistry and the School of Pharmacy, University of Kentucky, Lexington, KY.
- #999 **ENZYME-LINKED IMMUNOSORBENT ASSAYS FOR α -TRIAZINES AND UREA HERBICIDES IN HUMAN BODY FLUIDS AND ENVIRONMENTAL SAMPLES.** P Schneider, M H Goodrow, A D Lucas and B D Hammock. Depts. of Entomology and Environmental Toxicology, Univ. of California, Davis, CA.
- #1000 **ELISA DETECTION OF SOLUBLE AND MEMBRANE BOUND SAXITOXIN-INDUCED PROTEIN IN THE CRAB.** D S Smith and D D Kitts. Department of Food Science, University of BC, Vancouver, Canada. Sponsor: G D Bellward
- #1001 **ENZYME—CATALYZED HYDROLYSIS OF CYANIDE.** H Salem and S A Katz. U.S. Army Chemical Research Development and Engineering Center, Aberdeen Proving Ground, MD.
- #1002 **AN ENZYME IMMUNOASSAY FOR THE ENVIRONMENTAL MONITORING OF THE HERBICIDE BROMACIL.** H K M Bekheit, A D Lucas, F Szurdoki, S Gee, and B D Hammock. Depts. of Entomology and Environmental Toxicology, Univ. of California, Davis, CA.
- #1003 **DETERMINATION OF PLASMA NICOTINE AND COTININE IN RATS EXPOSED TO AGED AND DILUTED SIDESTREAM SMOKE, USING AN ENZYME-LINKED IMMUNOSORBENT ASSAY (ELISA).** K-M Chang, G Gentry, R Davis, M Stiles and C R E Coggins. R.J. Reynolds Tobacco Co., Winston-Salem, NC.
- #1004 **THE REACTION KINETICS OF AN ENZYME BOUND TO AN HPLC STATIONARY PHASE.** W D McGuinn and J L Way. Texas A & M University, College Station, TX.
- #1005 **FLOW CYTOMETRIC QUANTITATION OF CLEARANCE AND MACROPHAGE BURDEN OF INHALED POLYSTYRENE LATEX BEADS IN RODENTS.** P H Ayres, W K Shreve and C R E Coggins. R J Reynolds Tobacco Co, Winston-Salem NC.

**WEDNESDAY MORNING, FEBRUARY 26
CONVENTION CENTER—EXHIBIT HALL**

POSTER SESSION: CELL PROLIFERATION

Chairperson: Joanne Zurlo, Johns Hopkins University, Baltimore, MD

Displayed: 8:30 a.m.—11:30 a.m.

Attended: 8:30 a.m.—10:00 a.m.

- #1006 **EFFECT OF IRON-COMPLEXING AGENTS ON CELL PROLIFERATION OF CULTURED HUMAN CELL LINES.** B Schadwinkel, G Baretton and C-P Siegers. Institutes of Toxicology and Pathology, Medical University of Luebeck, FRG.
- #1007 **RETROSPECTIVE ASSESSMENT OF LIVER CELL PROLIFERATION: COMPARISON OF TWO PROLIFERATION MARKERS, PCNA AND TRITIATED THYMIDINE.** D R Dietrich^{1,3}, D S Marsman², J A Popp², and J A Swenberg³. ¹Institute of Toxicology, ETH-Zuerich, Switzerland; ²Chemical Industry Institute of Toxicology, Research Triangle Park, NC; and ³Departments of Environmental Sciences and Engineering and Pathology, University of North Carolina, Chapel Hill, NC.
- #1008 **PROLIFERATING CELL NUCLEAR ANTIGEN IMMUNOHISTOCHEMISTRY: AN ENHANCED METHOD FOR ARCHIVAL RODENT TISSUE.** A Greenwell, J F Foley, and R R Maronpot. National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- #1009 **DETECTION OF PROLIFERATING HEPATOCYTES IN RATS: COMPARISON OF ³H THYMIDINE (³H-TDR) VERSUS PROLIFERATING CELL NUCLEAR ANTIGEN (PCNA).** J Foley¹, R Maronpot¹, B Butterworth² and T Goldsworthy². ¹National Institute of Environmental Health Sciences, Research Triangle Park, NC, ²Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #1010 **INDUCTION OF HEPATIC CELL PROLIFERATION BY BENZODIAZEPINES.** J Hill¹, J Mirsalis¹, P Smith², D Kornbus². ¹SRI International, Menlo Park, CA; and ²Merck Sharp & Dohme Research Lab, West Point, PA.
- #1011 **DOSE EFFECTS OF BROMODEOXYURIDINE (BRDU) ON RODENT HEPATOCYTE PROLIFERATION MEASUREMENTS.** T L Goldsworthy, C S Dunn, and J A Popp. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #1012 **EFFECT OF CALORIC RESTRICTION ON AFLATOXIN B₁-INDUCED CELL PROLIFERATION AND DNA SYNTHESIS IN FISCHER 344 RATS.** M W Chou, M H Lu, R A Pegram, P Gao, S Cao, W T Allaben and R W Hart. National Center for Toxicological Research, Jefferson, AR.
- #1013 **SITE-SPECIFIC CELL PROLIFERATION IN RENAL TUBULAR CELLS BY THE RENAL TUBULAR CARCINOGEN tris (2-3-DIBROMOPROPYL) PHOSPHATE (TRIS).** M L Cunningham, M R Elwell, And H B Matthews. NIEHS, RTP, NC.
- #1014 **AGE-RELATED CHANGES IN CELL PROLIFERATION IN RAT LIVER AND KIDNEY.** J. Nakamura¹, D R Dietrich^{1,2}, J A Swenberg¹. ¹Departments of Environmental Sciences and Pathology, University of North Carolina, Chapel Hill, NC, and ²Inst. of Toxicology, ETH-Zuerich, Switzerland.
- #1015 **REGULATION OF α -AMYLASE SECRETION BY HUMAN PAROTID GLAND EPITHELIAL CELL CULTURES.** I C Xue-Hu and D P Chopra. Institute of Chemical Toxicology, Wayne State University, Detroit, MI. Sponsor: R F Novak.

- #1016 **EFFECTS OF PHORBOL 12-MYRISTATE 13-ACETATE (PMA) ON PHOSPHOLIPID METABOLISM IN AORTIC SMOOTH MUSCLE CELLS (SMCs) OF VARYING PROLIFERATIVE POTENTIAL.** R C Bowes, X Ou, and K S Ramos. Dept. of Vet. Physiol. Pharmacol., Texas A&M University, College Station, TX.
- #1017 **ASSOCIATION OF ENHANCED CELL PROLIFERATION AND NASAL CANCER IN RATS EXPOSED TO FORMALDEHYDE.** T M Monticello, F J Miller, J A Swenberg, T B Starr, J E Gibson, K T Morgan. CIIT, RTP, NC.
- #1018 **EFFECT OF ALACHLOR ON CELL PROLIFERATION IN RODENTS.** D W Brewster, K J Hotz, W E Ribelin, and A G E Wilson. Environmental Health Laboratory, Monsanto Co., St. Louis, MO.
- #1019 **THE S-PHASE RESPONSE OF THE RAT STOMACH FOLLOWING TWO WEEKS OF GAVAGE DOSING WITH ETHYL ACRYLATE.** D M Gillette¹, and C B Frederick². Univ of PA School of Veterinary Medicine¹ and Rohm and Haas Co.², Philadelphia, PA.
- #1020 **COLONIC EPITHELIAL CELL PROLIFERATION IN A RAT MODEL OF CARCINOGENESIS INDUCED BY A NONGENOTOXIN.** D K Wilcox and T A Bertram. Human Safety Dept., The Procter & Gamble Co., Cincinnati, OH. Sponsor: L Lehman-McKeeman.
- #1021 **SODIUM CHLORIDE-INDUCED CELLULAR PROLIFERATION IN RAT STOMACH.** D A McMillian, T A Bertram, V R Markiewicz, S V Machotka and M A Cifone. The Procter & Gamble Company, Cincinnati, OH and Hazleton Washington, Vienna, VA.
- #1022 **SUSTAINABILITY OF ETHYL ACRYLATE (EA) INDUCED FORESTOMACH (FS) CELL PROLIFERATION (CP) FOR 12, BUT NOT 6 MONTHS, LEADS TO CARCINOGENESIS AFTER CESSATION OF DOSING IN MALE F344 RATS.** B I Ghanayem, I M Sanchez, and M R Elwell. NIEHS, RTP, NC.
- #1023 **SODIUM ORTHOVANADATE (Na₂VO₄) STIMULATES 3T3L1 CELL GROWTH AND *c-fos* GENE EXPRESSION SYNERGISTICALLY WITH INSULIN AND OTHER GROWTH FACTORS.** Y W Chen and T M Chan. Department of Molecular Pharmacology and Toxicology, School of Pharmacy, University of Southern California, Los Angeles, CA. Sponsor: P Hochstein.
- #1024 **MODULATION OF CCL₄-INDUCED HEPATOTOXICITY BY MITOGEN EXPOSURE.** E J Calabrese, L A Baldwin, and D A Leonard. Environmental Health Sciences Program, University of Massachusetts, Amherst, MA.
- #1025 **RELATIONSHIP OF BILE DUCT OBSTRUCTION TO BILIARY EPITHELIAL CELL PROLIFERATION AND HYPERPLASIA FOLLOWING α -NAPHTHYLISOTHIOCYANATE (ANIT) TREATMENT.** P C Meunier, D C Kossor, R S Sozio and R S Goldstein. SmithKline Beecham Pharmaceuticals, Depts. Exper. Pathol. and Invest. Tox., King of Prussia, PA.
- #1026 **SULFUR MUSTARD-INDUCED ALTERATIONS OF DNA STRUCTURE AND CELL CYCLE KINETICS IN PROLIFERATING HUMAN CELLS IN CULTURE.** W J Smith, K M Sanders, J E Caulfield, and C L Gross. US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD. Sponsor: T-M Shih.
- #1027 **EFFECT OF PEROXISOME PROLIFERATORS ON S-PHASE SYNTHESIS IN PRIMARY CULTURES OF FISH HEPATOCYTES.** L A Baldwin, P T Kostecki, and E J Calabrese. Environmental Health Sciences Program, University of Massachusetts, Amherst, MA.

**WEDNESDAY MORNING, FEBRUARY 26
CONVENTION CENTER—EXHIBIT HALL**

POSTER SESSION: NEUROTOXICOLOGY I

Chairperson: Stephen M. Lasley, Illinois University College of Medicine, Peoria, IL

Displayed: 8:30 a.m.—11:30 a.m.

Attended: 10:00 a.m.—11:30 a.m.

- #1028 **MICROWAVE-INDUCED HYPERTHERMIA DISRUPTS WORKING MEMORY.** G A Mickley and B Cobb. Radiofrequency Radiation Branch (OEDR), Directed Energy Division, Armstrong Laboratory, Brooks AFB, TX.
- #1029 **THE EFFECT OF METHYL BROMIDE ON MEASURES OF OLFACTORY FUNCTION.** J E Evans, and L Hastings. Department of Environmental Health, University of Cincinnati, Cincinnati, OH. Sponsor: E J O'Flaherty.
- #1030 **NEUROBEHAVIORAL ASSESSMENT OF FPL 14294KE, A CCK-8 AGONIST WITH ANORECTIC ACTIVITY, IN SPRAGUE-DAWLEY RATS.** A J Jacobs, and S B Rawleigh. Fisons Pharmaceuticals, Divisional Research and Development, Rochester, NY.
- #1031 **A RETROSPECTIVE AND CROSS-SECTIONAL EVALUATION OF CENTRAL NERVOUS SYSTEM (CNS) SYMPTOMS IN AN ALUMINUM PRIMARY SMELTER.** D Echeverria, J S Woods, J P Holland, and A B Graves. Battelle Seattle Research Center, Seattle, WA.
- #1032 **THE EFFECTS OF P-AMINOPROPIOPHENONE (PAPP) AND P-AMINOOCETOYLPHENONE (PAOP) AGAINST SODIUM CYANIDE (CN) CHALLENGE AND ON RIGHTING AND MOTOR ACTIVITY IN MICE.** G A Rockwood, J A Romano, B A Scharf, and S I Baskin. United States Army Medical Research Institute of Chemical Defense, Drug Assessment and Pharmacology Divisions, Aberdeen Proving Ground, MD.
- #1033 **A CLINICAL AND NEUROPSYCHOLOGIC REVIEW OF 9 NEUROLOGIC CLAIMANTS PREVIOUSLY EXPOSED ON AN ALUMINUM POTLINE.** J P Holland, D Echeverria, J S Woods, and A B Graves. Battelle Seattle Research Center, Seattle, WA.

- #1034 **EFFECTS OF SUFENTANIL AND NALMEFENE ON AUDITORY BRAINSTEM RESPONSES IN THE FERRET.** S Reutter and R Mioduszewski. US Army Chemical Research, Development and Engineering Center, APG, MD. Sponsor: *H Salem*
- #1035 **PERSISTING EFFECTS OF CHRONIC NICOTINE EXPOSURE ON RADIAL-ARM MAZE PERFORMANCE.** *E D Levin* and J E Rose. Nicotine Research Laboratory, VA Medical Center and Dept of Psychiatry, Duke University, Durham, NC.
- #1036 **SCOPOLAMINE IMPAIRS LEARNING PERFORMANCE IN THE M-WATER MAZE IN RATS.** M A McCartney, P L Scinto, C A Lamia, J J Mitala, S Altan, D S Barrett. The R W Johnson Pharmaceutical Research Institute, Raritan, NJ. Sponsor: *W J Powers*.
- #1037 **EFFECTS OF CAFFEINE ON IONIZING RADIATION-INDUCED LOCOMOTOR DECREMENT IN MICE.** M R Landauer, M D Blair, M E Faccioli, S L Baxter, and J B Hogan. Department of Behavioral Sciences, Armed Forces Radiobiology Research Institute, Bethesda, MD. Sponsor: *V Bogo*.
- #1038 **AN ASSESSMENT OF REPRODUCTIVE AND DEVELOPMENTAL EFFECTS OF CAFFEINE IN ANIMALS.** *S G Gilbert*. Department of Environmental Health, University of Washington, Seattle, WA.
- #1039 **TWO WEEK DRUG INTERACTION STUDY WITH SND-919, ELDEPRYL® AND SINEMET® IN RHESUS MONKEYS.** A L Kiorpes, S A Paulsen. Hazleton Wisconsin, Inc., Madison, WI; *D J Ball, S B Montgomery*. Boehringer Ingelheim Pharmaceuticals Inc, Ridgefield, CT.
- #1040 **COMPARISON OF SERUM CHEMISTRY PARAMETERS IN MALE RHESUS MONKEYS UNDER THREE RESTRAINT METHODS.** B Billhmer, *R C Couch* and D C Stauffer. White Sands Research Center, Alamogordo, NM.
- #1041 **EVALUATION OF DIAZEPAM AS AN ANTICONVULSANT IN GD-INTOXICATED MONKEYS.** R G Menton, *C T Olson*, R C Kiser, M C Matthews, G S Dill. Battelle Memorial Institute, Columbus, OH.
- #1042 **ACUTE BEHAVIORAL TOXICITY OF MK-801 IN RHESUS MONKEYS: EFFECTS ON PERFORMANCE IN AN OPERANT TEST BATTERY (OTB).** *M G Paule*, E A Buffalo, M P Gilliam, and R A Allen. Developmental Toxicology, National Center for Toxicological Research, Jefferson, AR.
- #1043 **MK-801 ENHANCES BRAIN-STIMULATION REWARD AND IMPAIRS SERIAL PATTERN LEARNING IN RATS.** B S Toner, J D Rowan, and S B Fountain. Department of Psychology, Kent State University, Kent, OH. Sponsor: *Z Annau*.
- #1044 **TOXICOLOGY OF D7569, A PREDICTED ANXIOLYTIC AGENT, IN MALE BEAGLE DOGS.** *L E Geiger*, P C Mann, L J Ziemba, B A Flynn, M D Odorisio, N H Lee, and K L Neilson. ICI Pharmaceuticals Group, ICI Americas Inc., Wilmington, DE.
- #1045 **TOXICITY OF A POTENTIAL ANXIOLYTIC DRUG IN BEAGLE DOGS.** *R A Saatman*, M G Valerio, L J Ziemba, B A Flynn, M D Odorisio, N H Lee, K L Neilson. ICI Pharmaceuticals Group, ICI Americas Inc., Wilmington, DE.
- #1046 **EFFECTS OF FOUR PESTICIDES ON THE STARTLE RESPONSE IN HARLAN SPRAGUE DAWLEY® ADULT RATS.** *E Chow*, *J C Pettersen*, and C L Leahy. Environmental Health Center, Agricultural Div., CIBA-GEIGY Corp. Farmington, CT.
- #1047 **SYSTEMIC AND NEUROTOXIC EFFECTS OF ACUTE AND REPEATED PHENOL ADMINISTRATION.** M P Schlicht¹, *V C Moser*¹, B M Sumrell¹, E Berman², and *R C MacPhail*². ¹ManTech Environmental Technology and ²US EPA, RTP, NC.
- #1048 **REDUCED VISUAL CONTRAST SENSITIVITY IN RATS AFTER ACUTE EXPOSURE TO CARBON DISULFIDE (CS₂).** *W K Boyes*, M S Bercegeay, and *D W Herr*. Neurotoxicology Division, USEPA, RTP, NC.
- #1049 **CHEMICAL KINDLING WITH LINDANE IN THE RAT.** M E Gilbert. ManTech Technology Services Corp., RTP, NC. Sponsor: *H A Tilson*.
- #1050 **NEUROTOXICOLOGIC EXAMINATION OF RATS EXPOSED TO 1,1,1-TRICHLOROETHANE VAPOR FOR 13 WEEKS.** *J L Mattsson*, R R Albee, L G Lomax, M J Beekman, and P J Spencer. Health and Environmental Sciences, Dow Chemical Co., Midland, MI.
- #1051 **FREQUENCY-DEPENDENT OTOTOXICITY FOLLOWING INHALATION EXPOSURE TO TRICHLOROETHYLENE IN THE RAT.** *K M Crofton* and X Zhao. Neurotoxicology Division, USEPA, and ManTech Technology Services Corp, RTP, NC.
- #1052 **THE BEHAVIORAL EFFECTS OF INHALED TOLUENE IN COMBINATION WITH 1,1,1-TRICHLOROETHANE OR ETHANOL.** E B Evans and R L Balster. Dept. of Pharmacology and Toxicology, Medical College of Virginia, Richmond, VA. Sponsor: *J F Borzelleca*.
- #1053 **NEUROBEHAVIORAL TOXICITY OF INGESTED PERCHLOROETHYLENE IN RATS.** D A Warren, *C E Dallas*, T G Reigle, and S Muralidhara. Dept. of Pharmacology and Toxicology, College of Pharmacy, University of Georgia, Athens, GA.
- #1054 **A NEUROBEHAVIORAL EVALUATION OF PERCHLOROETHYLENE EXPOSURE IN PATIENTS AND DRY CLEANERS: A POSSIBLE RELATIONSHIP BETWEEN CLINICAL AND PRE-CLINICAL EFFECTS.** R White and D Echeverria. Battelle Seattle Research Center, Seattle, WA. Sponsor: *J S Woods*
- #1055 **ACUTE AND PERSISTENT NEUROTOXIC EFFECTS OF PERCHLOROETHYLENE IN THE RAT.** *B M Kulig*, J H C M Lammers and R M A Jaspers. Department of Neurotoxicology, Medical Biological Laboratory TNO, Rijswijk, The Netherlands.

- #1056 **ALTERATIONS IN FLASH EVOKED POTENTIALS PRODUCED BY 1,3-DICHLOROPROPANE: FURTHER EVIDENCE THAT LIPID SOLUBILITY ALONE DOES NOT PREDICT NEUROACTIVE POTENCY.** *D W Herr, M S Bercegeay and W K Boyer.* NTD, US EPA, Res. Tri, Pk., NC.
- #1057 **ISOPROPANOL 14-WEEK VAPOR INHALATION STUDY IN RATS AND MICE WITH NEUROTOXICITY EVALUATION IN RATS.** *H D Burleigh-Flayer¹, M W Gill¹, D J Marino², L W Masten³, R H McKee⁴, T R Tyler¹, and T Gardiner⁵.* ¹Bushy Run Research Center/Union Carbide Chemicals and Plastics Company Inc., Export, PA; ²BP America Inc., Cleveland, OH; ³ARCO Chemical Company, Newton Square, PA; ⁴Exxon Biomedical Sciences, Inc., East Millstone, NJ; and ⁵Shell Oil Company, Houston, TX.
- #1058 **METHANOL VAPOR AT A TRAFFIC SCENARIO LEVEL AFFECTS HUMAN NEUROBEHAVIORAL MEASURES.** *M R Cook, C Graham, H Cohen, M Gerkovich, F Bergman, R Harris, L Siemann.* Midwest Research Institute, Kansas City, MO. Sponsor: *V Reddy.*
- #1059 **THE EFFECTS OF ACUTE SUB-LETHAL DOSES OF METHANOL ON A SCHEDULE CONTROLLED BEHAVIOR IN RATS.** *A F Youssef, B Weiss, and C Cox.* Dept. of Forensic Medicine Toxicology, Cairo University, Egypt and Environmental Health Sciences Center, Univ. of Rochester, Rochester, NY.
- #1060 **DEVELOPMENTAL NEUROTOXICITY EVALUATION OF ISOPROPANOL.** *H K Bates¹, R H McKee², G S Bieler¹, T H Gardiner³, M W Gill⁴, D J Marino⁵, and L W Masten⁶.* ¹Research Triangle Institute, RTP, NC; ²Exxon Biomedical Sciences, East Millstone, NJ; ³Shell Oil Co., Houston, TX; ⁴Union Carbide Corp, Export, PA; ⁵BP America, Cleveland, OH; ⁶ARCO Chemical Co, Newton Square, PA.
- #1061 **A SUBCHRONIC NEUROTOXICITY STUDY OF A GASOLINE ADDITIVE SOLVENT VAPOR CONTAINING TOLUENE, SUBSTITUTED BENZENES AND 2-ETHYL-1-HEXANOL IN SPRAGUE-DAWLEY RATS.** *J S Duffy¹, R J Papciak², C J Hardy³ and D W Coombs³.* ¹Texaco Inc., Beacon, NY; ²Texaco Chemical Company, Houston, TX; ³Huntingdon Research Centre Ltd., Huntingdon, Cambridgeshire, England. Sponsor: *E S Lapadula.*

WEDNESDAY MORNING, FEBRUARY 26
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: PERIPHERAL NERVOUS SYSTEM

Chairperson: Herbert E. Lowndes, Rutgers University, Pharmacology and Toxicology, Piscataway, NJ

Displayed: 8:30 a.m.—11:30 a.m.

Attended: 8:30 a.m.—10:00 a.m.

- #1062 **METABOLISM OF 3,3-IMINODIPROPIONITRILE AND DEUTERIUM SUBSTITUTED ANALOGS: IMPLICATIONS FOR POTENTIAL ACTIVATION SITES.** *R H Denlinger, D C Anthony, K Amarnath, V Amarnath, and D G Graham.* Duke University Medical Center, Durham, NC and The Upjohn Company, Kalamazoo, MI.
- #1063 **COMPARISON OF Ca^{2+} /CALMODULIN-DEPENDENT PROTEIN KINASE II PURIFIED FROM CONTROL AND DIISOPROPYLPHOSPHOROFUORIDATE (DFP)-TREATED ADULT HENS.** *R P Gupta, D M Lapadula and M B Abou-Donia.* Duke University Medical Center, Durham, NC.
- #1064 **ENHANCED CALMODULIN BINDING AND INCREASED CALCIUM/CALMODULIN DEPENDENT PROTEIN KINASE II PHOSPHORYLATION FOLLOWING A SINGLE SUBCUTANEOUS NEUROTOXIC DOSE OF DFP.** *J Knoth-Anderson, M E Viana, and M B Abou-Donia.* Duke Univ. Med. Ctr., Durham, NC.
- #1065 **[³H]DIISOPROPYLPHOSPHOROFUORIDATE (DFP) BINDING TO CYTOSKELETAL PROTEINS OF HEN BRAIN AND SPINAL CORD *IN VITRO*.** *K R Wilmarth and M B Abou-Donia.* Duke University Medical Center, Durham, NC.
- #1066 **ACRYLAMIDE AND GAMMA-DIKETONE EFFECTS ON MITOSIS AND THE MITOTIC SPINDLE.** *M A Friedman, D W Sickles.* American Cyanamid Co., Wayne, NJ and Dept. of Cellular Biology and Anatomy, MCG, Augusta, GA.
- #1067 **PHARMACOKINETICS (PK) AND BIOAVAILABILITY (BA) OF RECOMBINANT HUMAN NERVE GROWTH FACTOR (rhNGF) IN THE MOUSE AND MONKEY.** *S A Baughman, M B Schoenhoff, S A Chen, A Rescigno, J D Green, and J Mordenti.* Department of Safety Evaluation, Genentech Inc., S. San Francisco, CA.
- #1068 **DISRUPTION OF ENERGY METABOLISM AND NEURONAL DEGENERATION BY 3-NITROPROPIONIC ACID.** *M I Sabri, A C Ludolph, P Novitt, and P S Spencer.* Center for Research on Occupational and Environmental Toxicology, Oregon Health Sciences University, Portland, OR.
- #1069 **EVALUATION OF THE ACUTE DELAYED NEUROTOXICITY OF DURAD® 220B TRIARYL PHOSPHATE IN THE DOMESTIC HEN.** *L A Kotkoskie, C Freeman, W Loeb¹, R F McConnell and M L Weiner.* FMC Corporation, Princeton, NJ; ²AniLytics Inc., Gaithersburg, MD.
- #1070 **ACRYLAMIDE ALTERS PROXIMODISTAL ELEMENTAL DISTRIBUTION OF RAT PERIPHERAL NERVE AXONS.** *R M LoPachin, C M Castiglia and A J Saubermann.* Department of Anesthesiology, SUNY Stony Brook, Stony Brook, NY.
- #1071 **POTENTIATION OF ORGANOPHOSPHATE NEUROPATHY: PRELIMINARY HISTOPATHOLOGY AND DEMONSTRATION OF CLINICAL POTENTIATION BY AN ORGANOPHOSPHINATE.** *R J Richardson, B L Yano, U S Kayyali, and J C Randall.* Toxicology Program, The University of Michigan, Ann Arbor, MI, and ²Toxicology Research Laboratory, The Dow Chemical Company, Midland, MI.

- #1072 **NEURONAL LOSS IN DORSAL ROOT GANGLION FOLLOWING 3-ACETILPYRIDINE.** A L Valle, C M Beiswanger, H E Lowndes, and K R Reuhl. Neurotoxicology Laboratories, Rutgers University College of Pharmacy and JGPT, Piscataway, NJ.
- #1073 **ACUTE 3-ACETILPYRIDINE CAUSES SMALL FIBER NEUROPATHY.** C M Beiswanger, D Zhou, K R Reuhl, and H E Lowndes. Neurotoxicology Laboratories, Rutgers Univ. College of Pharmacy, and EOSHI, Piscataway, NJ.
- #1074 **EFFECTS OF METHYLMERCURY (MeHg) ON Na⁺ AND Ca²⁺ CHANNELS AT INTACT SOMATIC MOTOR NERVE TERMINALS.** T J Shafer and W D Atchison. Dept. Pharmacol. and Toxicol. and Inst. for Env. Toxicol., Michigan State University, E. Lansing, MI.
- #1075 **REFRACTORINESS TO THE NEUROMUSCULAR TOXICITY OF DITHIOBIURET IN RATS.** K D Williams, A Z Elliott, R E Peterson, and W D Atchison. Hazleton Wisconsin and the University of Wisconsin, Madison, WI; Michigan State University, E. Lansing, MI.
- #1076 **COMPARISON OF TOXICITIES OF ACRYLAMIDE (ACR) AND 2,5-HEXANEDIONE (HD) IN HENS AND RATS ON 3-WEEK DOSING REGIMENS.** B S Jortner and M Ehrlich. Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.
- #1077 **PRECLINICAL SAFETY EVALUATION OF RECOMBINANT HUMAN NERVE GROWTH FACTOR (rhNGF).** B C Rogers, L Dickrell, C P Chow, G C McCormick, T G Terrell and J D Green. Department of Safety Evaluation, Genentech Inc., S. San Francisco, CA and Hazleton, Inc., Madison, WI.

**WEDNESDAY MORNING, FEBRUARY 26
CONVENTION CENTER—EXHIBIT HALL**

POSTER SESSION: HEMATOPOIETIC/PHAGOCYTIC CELLS

Chairpersons: Albert E. Munson, Medical College of Virginia, Richmond, VA and Scott E. Loveless, Haskell Laboratory, Newark, DE

Displayed: 8:30 a.m.—11:30 a.m.

Attended: 10:00 a.m.—11:30 a.m.

- #1078 **HEMATOLOGIC CHANGES IN THE RAT FOLLOWING TREATMENT WITH A HYPOLIPIDEMIC AGENT.** T Sellers, D Meyer, M Gunning, K Lynch, S Mabray, L Macartney and W Kerns. Dept of Experimental Pathology, SmithKline Beecham Pharmaceuticals, King of Prussia, PA. Sponsor: R Goldstein.
- #1079 **EFFECTS OF 2-BUTOXYETHANOL (BE) AND ITS TOXIC METABOLITE 2-BUTOXYACETIC ACID (BAA) ON BLOOD FROM VARIOUS MAMMALS IN VIVO AND IN VITRO.** S Ward, C Wall, and B I Ghanayem. NIH/NIEHS, RTP, NC.
- #1080 **FAVISM: DIVICINE HEMOTOXICITY.** D C McMillan and D J Jollow. Dept. of Pharmacology, MUSC, Charleston, SC.
- #1081 **INVESTIGATION OF POTENTIAL FOR THROMBOCYTOPENIA INDUCED BY MAGNEVIST OR GADODIAMIDE INJECTION (OMNISCAN).** B A Mayes, R M Everett, K A Gossett and E P Harling. Sterling Research Group, Rensselaer, NY.
- #1082 **ALTERATION OF CELLULAR GLUTATHIONE AS A FACTOR IN HYDROQUINONE-INDUCED CYTOTOXICITY TO PRIMARY CULTURED BONE MARROW STROMAL CELLS OF DBA/2 MICE.** Y Li and M A Trush. Division of Toxicological Sciences, School of Hygiene and Public Health. The Johns Hopkins University, Baltimore, MD.
- #1083 **THE INFLUENCE OF DOSING REGIMEN ON SYSTEMIC TOXICOLOGY OF 3, DEOXY 3, FLUOROTHYMININE (FLT) IN LABORATORY ANIMALS.** E Burden, R Lewis, D E Johnson, R Schroer. American Cyanamid Company, Medical Research Division, Pearl River, NY.
- #1084 **PRECLINICAL SAFETY EVALUATION OF N-[4-(4-FLUOROPHENYL) SULFONYL] PHENYL] ACETAMIDE (CL 259,763).** W J Dougherty, R A Schroer, C Traitor, L Boroje. American Cyanamid Co., Medical Research Division, Pearl River, NY. Sponsor: D Novicki
- #1085 **A POSSIBLE MECHANISM OF HEINZ BODY HEMOLYTIC ANEMIA INDUCED BY DQ-2511 IN DOGS.** H Ohno, H Tojo, M Nomura, and S Takayama. Daiichi Pharmaceutical Co., Ltd. Tokyo, Japan.
- #1086 **CHARACTERIZATION OF AN IN VITRO MODEL FOR ASSESSING MITOCHONDRIAL MATURATION IN MONOCYTIC CELLS.** S J Rembish, R W Craig and M A Trush. Johns Hopkins Medical Institutions, Baltimore, MD.
- #1087 **IN VIVO AND IN VITRO METABOLIC AND ELECTRON SPIN RESONANCE (ESR) SPECTRAL CHANGES DURING ANILINE-INDUCED HEMATOXICITY IN RATS.** M M Iba¹, A Storch¹, C F Schafer², P Downs², W Massion², and J L Poyer³. Rutgers Univ., Piscataway, NJ¹, Univ. of Oklahoma Med. Ctr.², and Oklahoma Med. Res. Foundn.³, Oklahoma City, OK.
- #1088 **CHEMOTACTIC POTENCY OF BRONCHOALVEOLAR LAVAGE (BAL) FLUID AFTER ACUTE O₃ EXPOSURE IN MICE.** S Hirano, NIES, Tsukuba, Japan/Duke Univ., NC and G E Hatch. HERL, US-EPA, Durham, NC.
- #1089 **EFFECT OF RICIN ON MITOCHONDRIAL FUNCTION IN ALVEOLAR MACROPHAGES.** J E Swauger, J G Pace, P J Glass, S J Rembish, and M A Trush. US Army Medical Research Inst. of Infectious Diseases, Frederick, MD and Johns Hopkins Univ., Baltimore, MD.
- #1090 **A COMPARISON OF THE PULMONARY DEFENSES AGAINST STREPTOCOCCAL INFECTION IN RATS AND MICE FOLLOWING O₃ EXPOSURE.** M I Gilmour*, P Park, and M J K Selgrade. *Center for Environmental Medicine, UNC/Chapel Hill. HERL/US EPA, Research Triangle Park, NC.

- #1091 **ACID AEROSOL EXPOSURE ALTERS INTRACELLULAR PH OF ALVEOLAR MACROPHAGE.** L C Chen, Q S Qu, T Gordon, M O Amdur and J M Fine*. Institute of Environmental Medicine, New York University Medical Center, Tuxedo, NY; *Norwalk Hospital, Norwalk, CT.
- #1092 **ATTENUATION OF BLEOMYCIN-INDUCED SEQUESTRATION OF NEUTROPHILS IN HAMSTER LUNGS BY DERMAL APPLICATION OF NITROGLYCERIN.** S N Giri, Q Wang, D R Haynam, D M Hyde, and A B Combs. Depts. of Vet. Pharmacol. and Toxicol. and Anatomy, Univ. of Calif., Davis, CA, and Div. Pharmacol., Univ. of Texas, Austin, TX.
- #1093 **EFFECT OF OZONE EXPOSURE ON SURFACTANT ASSOCIATED PROTEIN A (SP-A) CONTENT IN THE RESPIRATORY TRACT OF GUINEA PIGS.** W-Y Su, T Gordon, I Finkelstein, and M Amdur. Institute of Environ. Medicine, NYC Medical Center, Tuxedo, NY.
- #1094 **COMPARATIVE TOXICOLOGY OF SULFURIC ACID AEROSOLS.** M Amdur, T Gordon, and L C Chen. Institute of Environmental Medicine, NYC Medical Center, Tuxedo, NY.
- #1095 **ACTIVATED NEUTROPHILS FROM RAT INJURE ISOLATED HEPATOCYTES.** S VanCise, M B Bailie, R A Roth, and P E Ganey. Depts. of Pharmacology, Toxicology and Med., and Inst. for Environmental Toxicology, Michigan State University, East Lansing, MI.
- #1096 **KUPFFER CELL PHAGOCYTOSIS IN ISOLATED, PERFUSED LIVERS FROM IRON-TREATED GUINEA PIGS.** P E Ganey, W Lane, K A Schwartz, and M Wilson. Depts. of Med. and Pharmacol. and Toxicol., Michigan State University, East Lansing, MI.

WEDNESDAY, FEBRUARY 26

12:00 NOON-1:00 P.M.

CONVENTION CENTER-BALLROOM 6C

RESPONSES OF THE BRAIN TO TOXIC INSULT: MOLECULES, MODELS, AND MEDICINE

1992 Burroughs Wellcome Toxicology Scholar Award Lecture

by Richard P. Mailman, School of Medicine, University of North Carolina, Chapel Hill, NC

Chaired by Meryl H. Karol, Ph.D.

Dopamine neurons, often a site of insult by chemicals, also are important in the etiology and therapy of numerous neurological and psychiatric disorders. Yet much remains to be known about how the nervous system responds to destruction of dopamine neurons. To compensate for loss of released neurotransmitter, it is assumed that target cells increase synthesis of receptors, thus amplifying residual signals. While such "receptor up-regulation" has been believed to be the principal way of adapting to severe insult in the mature nervous system, our recent work has suggested that this mechanism often may be an epiphenomenon. Rather, factors such as the interaction of different classes of dopamine receptors, and the cytoarchitecture of the neurons on which these dopamine receptors are located, may be more important. Experiments aimed at these questions led to the hypothesis that restoration of normal function after severe insult (e.g., Parkinson's disease or MPTP-intoxication) requires activation of the D₁ class of dopamine receptors. This hypothesis would explain the lack of effectiveness of D₂ dopamine agonists in severe parkinsonism. In addition, it suggested that the negative clinical trials with available D₁ agonists was due to these drugs being only partial agonists. Studying the mechanisms of ligand interaction with D₁ receptors soon led to the synthesis of dihydrexidine, the first full efficacy, high potency bioavailable D₁ agonist. Use of dihydrexidine in these models has provided dramatic evidence of the importance of D₁ receptors in maintaining normal motor function of the primate basal ganglia, and also has provided new information about the sequelae of severe intoxication.

WEDNESDAY AFTERNOON, FEBRUARY 26

1:30 p.m.-4:30 p.m.

CONVENTION CENTER-BALLROOM 6A

SYMPOSIUM: ADVANCES IN BIOLOGICALLY-BASED MODELS FOR RESPIRATORY TRACT UPTAKE OF INHALED VAPORS

Sponsored by the Inhalation and Risk Assessment Specialty Sections

Chairperson: Michele A. Medinsky, CIIT, Research Triangle Park, NC

Physiologically-based pharmacokinetic models for volatile organic chemicals typically describe the respiratory tract as a single compartment in which chemical in the alveolar air space and the arterial blood are in instantaneous equilibrium. These models also assume that distribution of chemical in the airstream throughout the respiratory tract is uniform and that uptake is only significant in the alveolar region. A functional role for the upper respiratory tract in the uptake of volatile chemicals has been largely ignored. While these models have worked well for chemicals with low aqueous solubility in biological fluids, systemic uptake of highly soluble volatiles is overestimated. Thus, there is a significant effort to describe the critical determinants for uptake of soluble chemicals and to formulate more biologically relevant descriptions of the respiratory tract. Investigators have addressed this problem from several viewpoints. Airflow patterns in the respiratory tract, regional metabolism, diffusion-dependent uptake, and the cyclic nature of respiration are now being incorporated into the current models. Use of dosimetric models which incorporate relevant biology for inhaled chemicals will ultimately result in more rational risk assessments.

- #1097 1:30 **ADVANCES IN BIOLOGICALLY-BASED MODELS FOR RESPIRATORY TRACT UPTAKE OF INHALED VAPORS: INTRODUCTION.** M A Medinsky. CIIT, Research Triangle Park, NC.
- #1098 1:40 **MODELS OF AIRFLOW AND REGIONAL GAS UPTAKE IN THE RESPIRATORY TRACT.** J S Kimbell, M E Anderson, and K T Morgan. CIIT, Research Triangle Park, NC.
- #1099 2:20 **NASAL FIRST-PASS METABOLISM AND ABSORPTION OF ORGANIC VAPORS.** J B Morris. Toxicology Program, University of Connecticut, Storrs, CT.

- #1100 3:10 **RESPIRATORY TRACT UPTAKE OF INHALED VAPORS DURING CYCLIC BREATHING.** P Gerde¹ and A R Dahl². ¹National Institute of Occupational Health, Solna, Sweden; ²Inhalation Toxicology Research Institute.
- #1101 3:50 **THE INFLUENCE OF THE RESPIRATORY TRACT ON THE UPTAKE OF INHALED COMPOUNDS AND ON THEIR DELIVERY TO SYSTEMIC BLOOD.** J H Overton. US EPA, Research Triangle Park, NC.

WEDNESDAY AFTERNOON, FEBRUARY 26
1:30 p.m.—4:30 p.m.
CONVENTION CENTER—BALLROOM 6C

SYMPOSIUM: MOLECULAR RESPONSES TO ENVIRONMENTAL MODIFICATION OF CRITICAL GENES

Chairperson: George E. Milo, The Ohio State University Comprehensive Cancer Center and Department of Medical Biochemistry, Columbus, OH

The mammalian and human cell is a diverse factory that is dynamically carrying on functions that contribute to the pleiotypic responses of daily insults. Insofar as these cells exhibit specific recognized responses to these daily insults, such as DNA-adduction, protein-adduction, DNA repair, altered gene function, growth arrest, cell killing, transformation and mutagenesis, the underlying mechanisms of response to these insults and the cascades that occur that lead to an altered biological response, will be discussed. An attempt to deal with specific underlying molecular genetic mechanisms and the consequences of the alteration of critical genes will be discussed. An attempt will be made to correlate early changes in DNA- or protein-adduction with late changes in gene function.

- #1102 1:30 **MOLECULAR RESPONSES TO ENVIRONMENTAL MODIFICATION OF CRITICAL GENES: INTRODUCTION.** G E Milo. The Ohio State University Comprehensive Cancer Center and Department of Medical Biochemistry, Columbus, OH.
- #1103 1:40 **RESPONSES OF THE [Ah] GENE BATTERY TO ENVIRONMENTAL ADVERSITY: POLYCYCLIC AROMATIC COMPOUNDS AND OXIDATIVE STRESS.** D W Nebert, H-C Liang, and H G Shertzer. Department of Environmental Health, Univ. Cincinnati Medical Center, Cincinnati, OH.
- #1104 2:10 **ACTIVATION OF PROTO-ONCOGENES IN MOUSE LUNG TUMORS.** G D Stoner, M You, R R Maronpot, and M W Anderson. Medical College of Ohio, Toledo, OH and NIEHS, Research Triangle Park, NC.
- #1105 2:40 **BIOCHEMICAL PROCESSING OF DNA ADDUCTS OF THE ANTICANCER DRUG CISPLATIN.** J M Essigmann. Division of Toxicology, Whitaker College of Health Sciences and Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA.
- #1106 3:10 **ROLE OF CHROMATIN CONFORMATION IN MODIFICATION OF SPECIFIC CRITICAL GENES.** G E Milo. The Ohio State University Comprehensive Cancer Center and Department of Medical Biochemistry, Columbus, OH.

WEDNESDAY AFTERNOON, FEBRUARY 26
1:30 p.m.—4:00 p.m.
CONVENTION CENTER—ROOM 607

PLATFORM SESSION: REACTIVE INTERMEDIATES AND COVALENT BINDING

Chairpersons: Garold S. Yost, University of Utah, Salt Lake City, UT and Edward A. Khairallah, University of Connecticut, Storrs, CT

- #1107 1:30 **MEASUREMENT OF FREE RADICAL-INDUCED BASE DAMAGE IN DNA.** A F Fuciarelli, E C Sisk, and J D Zimbrick. Biology and Chemistry Department, Battelle, Pacific Northwest Laboratory, Richland, WA. Sponsor: D L Springer.
- #1108 1:45 **TRANSFORMATION OF MYOGLOBIN TO AN OXIDASE BY REACTIVE METABOLITES: TOXICOLOGICAL IMPLICATIONS.** Y Osawa, J F Darbyshire, P J Steinbach, and B R Brooks. Laboratory of Chemical Pharmacology, NHLBI and the Division of Computer Research and Technology, National Institutes of Health, Bethesda, MD. Sponsor: L R Pohl.
- #1109 2:00 **METABOLIC ACTIVATION OF TRIS(2,3-DIBROMOPROPYL)-PHOSPHATE TO REACTIVE INTERMEDIATES: COVALENT BINDING, REACTIVE METABOLITE FORMATION AND DNA DAMAGE *IN VIVO*.** P G Pearson¹, K G Omichinski³, J A Holme³, G Brunborg³, E J Soderlund³, E Dybing³, and S D Nelson². ¹Drug Metabolism Research, The Upjohn Company, Kalamazoo, MI; ²Department of Medicinal Chemistry, School of Pharmacy, University of Washington, Seattle, WA; and ³Department of Toxicology, National Institute of Public Health, Oslo, Norway.
- #1110 2:15 **POSSIBLE ROLE OF FREE RADICAL FORMATION IN CLOZAPINE-INDUCED AGRANULOCYTOSIS.** V Fischer, J A Haar, L Greiner, R V Lloyd*, and R P Mason*. Drug Safety Dept., Sandoz Pharma., Basel, Switzerland; *Lab Molecular Biophysics, NIEHS, RTP, NC. Sponsor: G Lucier.
- #1111 2:30 **DIRECT PHOTOCHEMICAL TOXICITY TO PROSTATE TUMOR SLICES.** J Hampton and S Selman. Departments of Pathology and Urology, Medical College of Ohio, Toledo, OH.
- #1112 2:45 **INACTIVATION OF GLYCERALDEHYDE-3-PHOSPHATE DEHYDROGENASE (GAPDH) BY N-ACETYL-p-BENZOQUINONE IMINE (NAPQI).** E C Dietze, A Schaffer and S D Nelson. Department of Medicinal Chemistry, School of Pharmacy, University of Washington, Seattle, WA.
- #1113 3:00 **METABOLISM OF 3-METHYLINDOLE BY VACCINIA-EXPRESSED CYTOCHROME P450 ENZYMES.** J R Thornton-Manning, F J Gonzalez and G S Yost. Dept. of Pharmacol. and Toxicol., University of Utah Salt Lake City, UT and NIH.

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- #1114 3:15 **ROLE OF pH IN THE BIOREDUCTIVE ACTIVATION OF MITOMYCIN C BY DT-DIAPHORASE.** D Siegel, *N W Gibson and D Ross. Molecular Toxicology Environ. Health Sci. Prog., School of Pharmacy, Univ. of Colorado, Boulder, CO. and *School of Pharmacy, Univ. of S. California, Los Angeles, CA.
- #1115 3:30 **METABOLISM AND BLADDER TOXICITY OF CYCLOPHOSPHAMIDE (CP) IN MICE.** L Fraiser and J P Kehrer. Division of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX.
- #1116 3:45 **STABLE MECHANISTIC STUDIES ON THE OXIDATION OF 3-METHYLINDOLE.** G L Skiles and G S Yost. Dept. of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

WEDNESDAY AFTERNOON, FEBRUARY 26

1:30 p.m.—4:00 p.m.

CONVENTION CENTER—ROOM 608

PLATFORM SESSION: PHAGOCYTIC CELL INDUCED INJURY

Chairpersons: Steven I. Shedlofsky, Veterans Administration Medical Center, Lexington, KY and Andrij Holian, University of Texas, Houston, TX

- #1117 1:30 **QUESTIONABLE ROLE OF AH RECEPTOR IN MEDIATING ENHANCED ENDOTOXICITY.** S Shedlofsky, N Hoglen, A Swim, and L Robertson. Dept. Medicine, VA Hosp and Graduate Center for Toxicology, University of Kentucky, Lexington, KY.
- #1118 1:45 **EFFECTS OF XENOBIOTICS ON SERUM TUMOR NECROSIS FACTOR (TNF) AND INTERLEUKIN-6 (IL-6) RELEASE AFTER LPS IN RATS.** N Hoglen, A Swim, L Robertson, and S Shedlofsky. Dept. Med., VA Hosp. and Grad. Ctr. for Toxicol., Univ. of KY, Lexington, KY.
- #1119 2:00 **INHIBITION OF MACROPHAGE FUNCTION AMELIORATES ACETAMINOPHEN HEPATOTOXICITY.** D L Laskin, C R Gardner, J A Todaro, V Price and D Jollow. Joint Grad. Prog. Toxicol., Rutgers University, Piscataway, NJ and Univ. S. Carolina, Charleston, SC.
- #1120 2:15 **FIBROGENIC PARTICULATE STIMULATION OF THE HUMAN ALVEOLAR MACROPHAGE (AM).** A Holian, R Hamilton, R C Perkins and R K Scheule. Depts. of Int. Med. and Pharmacol., The University of Texas Medical School, Houston, TX.
- #1121 2:30 **MODULATION OF QUARTZ AND CHRYSOTILE-INDUCED PRODUCTION OF REACTIVE OXYGEN METABOLITES.** K M Savolainen, M Tuomala, and M Holopainen. Dept. Environ. Hyg. Toxicol., Natl. Publ. Hlth. Inst., Kuopio, Finland.
- #1122 2:45 **EFFECTS OF OZONE INHALATION ON RAT ALVEOLAR MACROPHAGE (MP) PRODUCTION OF REACTIVE NITROGEN AND OXYGEN INTERMEDIATES.** K Pendino, C Punjabi, C Gardner, J Laskin, D Laskin. Joint Graduate Program in Toxicology, Rutgers University and UMDNJ-RW Johnson Medical School, Piscataway, NJ.
- #1123 3:00 **GENERATION OF FREE RADICALS FROM PHAGOCYTES INDUCED BY OCCUPATIONAL MINERALS.** V Vallyathan, N S Dalal, J F Mega, and X Shi. Div. of Resp., Dis. Studies, NIOSH and Chem. Dept., West Virginia Univ., Morgantown, WV. Sponsor: V Castranova.
- #1124 3:15 **EFFECTS OF HYPEROXIA ON THE ACTIVITY OF RAT PULMONARY MACROPHAGES.** V Castranova, J Y C Ma, M W Dedhia, N S Dalal, M Billie, and V Vallyathan. Div. Respiratory Disorder Studies, NIOSH, and Div. Pulmonary Medicine, and Dept. of Chemistry, West Virginia University, Morgantown, WV.
- #1125 3:30 **BRONCHO-ALVEOLAR LAVAGE FLUID ENZYMES AFTER EXPOSURE OF MICE TO RICIN AND RICIN B CHAIN AEROSOLS.** D A Creasia, S Bavari, K A Bostian and D M Walters. United States Army Medical Research Institute of Infectious Diseases, Frederick, MD.
- #1126 3:45 **RICIN AND RICIN B CHAIN STIMULATE THE RELEASE OF TUMOR NECROSIS FACTOR-ALPHA FROM ALVEOLAR MACROPHAGES.** S Bavari*, D M Walters, D A Creasia. US Army Medical Research Institute of Infectious Diseases, Frederick, MD.

WEDNESDAY AFTERNOON, FEBRUARY 26

1:30 p.m.—4:00 p.m.

CONVENTION CENTER—ROOM 611

PLATFORM SESSION: RECEPTORS AND SIGNAL TRANSDUCTION

Chairperson: Donald A. Fox, University of Houston, Houston, TX and Lucio G. Costa, University of Washington, Seattle, WA

- #1127 1:30 **ENTERIC GABA-B RECEPTORS AS MOLECULAR TARGETS FOR IVERMECTIN IN MAMMALS.** T Coccini, S M Candura, L Manzo, L G Costa and M Tonini. Department of Pharmacology, University of Pavia, Italy and Department of Environmental Health, University of Washington, Seattle, WA.
- #1128 1:45 **ENHANCEMENT OF GABA-MEDIATED RESPONSE BY LANTHANUM.** M Yan, and T Narahashi. Department of Pharmacology Northwestern Univ. Med. Sch., Chicago, IL.
- #1129 2:00 **INSECTICIDE KINETICS AT THE GABA_A RECEPTOR NONCOMPETITIVE BLOCKER BINDING SITE.** J E Hawkinson and J E Casida. Pesticide Chemistry and Toxicology Laboratory, Dept. Entomological Sciences, University of California, Berkeley, CA. Sponsor: E T Wei.

- #1130 2:15 **A BIOLOGICALLY-BASED MODEL FOR NICOTONIC RECEPTOR DYNAMICS IN THE RAT BRAIN.** D R Plowchalk*, E N Fluhler, P M Lippiello, and J D deBethizy. *Duke University Medical Center, Durham, NC and RJR/Nabisco, Winston-Salem, NC.
- #1131 2:30 **LIPID PEROXIDATION-INDUCED ALTERATION OF MEMBRANE FLUIDITY AND MUSCARINIC CHOLINERGIC BINDING IN RAT FRONTAL CORTEX: AN *IN VITRO* STUDY.** C Ghosh, R M Dick, and S F Ali. Div. Reprod. and Dev. Tox., NCTR, Jefferson, AR and School of Pharmacy, Northeast Louisiana University, Monroe, LA. (This abstract is presented as abstract #667A in the Tuesday Morning Molecular/Cellular Toxicology Poster Session.)
- #1132 2:45 **THE ROLE OF NMDA RECEPTOR ACTIVATION IN CYANIDE NEUROTOXICITY IN PRIMARY HIPPOCAMPAL CULTURES.** G E Isom, G K W Yim and M N Patel. Dept. of Pharmacol. and Toxicol., School of Pharmacy and Pharmacol. Sciences, Purdue University, W.Lafayette, IN.
- #1133 3:00 **PARAOXON BINDS TO DIFFERENT SITES ON THE MUSCARINIC RECEPTOR AND ITS COUPLED EFFECTOR SYSTEM IN RAT SUBMAXILLARY GLAND CELLS.** D A Jett, E A M Abdallah, M E Eldefrawi, and A T Eldefrawi. Department of Pharmacology and Experimental Therapeutics, University of Maryland, School of Medicine, Baltimore, MD.
- #1134 3:15 **MODULATION OF M1 AND M2 MUSCARINIC RECEPTOR SUBTYPES IN RAT BRAIN AREAS BY REPEATED EXPOSURES TO AN ORGANOPHOSPHORUS INSECTICIDE.** B E Fitzgerald and L G Costa. Dept. of Environmental Health, University of Washington, Seattle, WA.
- #1135 3:30 **CHLORPYRIFOS OXON BINDS WITH HIGH AFFINITY TO A POPULATION OF MUSCARINIC RECEPTORS IN RAT STRIATUM.** R A Huff, J Knoth-Anderson, and M B About-Donia. Duke University Medical Center, Durham, NC.
- #1136 3:45 **ABILITY OF LEUKOTRIENES TO DECREASE LIGAND BINDING AT THE CENTRAL BENZODIAZEPINE RECEPTOR.** H L Komiskey and J Harper. The Xavier Institute of Bioenvironmental Toxicology, Xavier University of Louisiana, College of Pharmacy, New Orleans, LA.

WEDNESDAY AFTERNOON, FEBRUARY 26
CONVENTION CENTER—ROOM 605

POSTER DISCUSSION SESSION: OCULAR/DERMAL *IN VITRO* TOXICITY ASSESSMENT

Chairpersons: Daniel Acosta, University of Texas, Austin, TX and John M. Frazier, Johns Hopkins University, Baltimore, MD

Displayed: 1:30 p.m.—4:30 p.m.

Discussion: 2:30 p.m.—4:30 p.m.

- #1137 **COMPARISON TESTING OF OPHTHALMIC AGENTS BY *IN VIVO* IN RABBITS VERSUS *IN VITRO* TOXICOLOGY.** S Matsumoto, I M Ismail, O Angelov, C Vangyi, M Wong, S Hickok, K Palmer, B Brar. Allergan Pharmaceuticals, Safety Evaluation Department, Irvine, CA.
- #1138 **EVALUATION OF FIVE *IN VITRO* ASSAYS AS PREScreens FOR *IN VIVO* OCULAR IRRITATION POTENTIAL OF PHARMACEUTICALS.** J R Hincks*, T J B Gray, E I Fischer*, C A Chrestensen*, J Richardson, and H M Olson. Toxicology Dept., Sterling Research Group, *Rensselaer, NY and Alnwick, Northumberland, UK.
- #1139 **EVALUATION OF COMBINATIONS OF TEST RESULTS FROM THREE *IN VITRO* METHODS ON FIFTY CHEMICALS TO PREDICT OCULAR IRRITATION.** V C Gordon, B Realica, K Atkinson* and M Balls*. Ropak Laboratories, Irvine, CA, and *Frame, Nottingham, UK.
- #1140 **ASSESSING EYE IRRITATION POTENTIAL USING THE 10-DAY CHORIOALLANTOIC MEMBRANE VASCULAR ASSAY (10 DAY CAMVA).** D K Waters, D M Bagley, B M Kong, and S J De Salva. Colgate-Palmolive Company, Piscataway, NJ.
- #1141 **TESTING OCULAR IRRITANCY *IN VITRO* USING SKIN² DERMAL MODEL IN THE SILICON MICROPHYSIOMETER.** K R Miller*, G C Mun*, and D Triglia. *Microbiological Associates, Inc., Rockville, MD and Marrow-Tech, Inc., La Jolla, CA. Sponsor: L L Yang.
- #1142 **HUMAN SKIN CELL CULTURES FOR *IN VITRO* SKIN AND EYE IRRITANCY ASSESSMENTS OF NEAT TEST MATERIALS.** M A Perkins, D A Roberts, and R Osborne. The Procter & Gamble Company, Human Environmental Safety Division, Cincinnati, OH. Sponsor: L Lehman-McKeeman.
- #1143 ***IN VITRO* CYTOTOXICITY/IRRITANCY TESTING USING THE MARROW-TECH 3-DIMENSIONAL SKINTM HUMAN DERMAL MODEL AND SIX DIFFERENT ASSAY SYSTEMS.** D Triglia, J Rust, I Kidd and S S Braa. Marrow-Tech, Inc., La Jolla, CA. Sponsor: D Hobson.
- #1144 **THE LIVING SKIN EQUIVALENTTM AS AN *IN VITRO* TOXICITY TESTING MODEL.** R J Gay, M Swiderek, D Nelson, A Ernesti. Organogenesis Inc., Cambridge, MA. Sponsor: P Silber.
- #1145 **USE OF MICROTOX AS AN *IN VITRO* ADJUNCT TO *IN VIVO* DERMAL IRRITATION TESTING.** R J Koslo, A Butler, V Farina. Pharmacology/Toxicology Department, Bristol-Myers Products, Hillside, NJ. Sponsor: T A Re.
- #1146 **ELEVATION OF INTRACELLULAR CALCIUM BY 13-CIS RETINOIC ACID (13-CIS RA) IN PRIMARY RAT KERATINOCYTE MODEL: IMPLICATIONS FOR TOXICITY.** J Giridhar and D Acosta. Div. of Pharmacology and Toxicology, College of Pharmacy, University of Texas at Austin, Austin, TX.

- #1147 **REFORMED HUMAN SKIN: POTENTIAL SCREENING TOOL FOR DERMAL IRRITATION TESTING.** M D Helman, S Bie-saga, R J Koslo. Pharmacology/Toxicology Department, Bristol-Myers Products, Hillside, NJ. Sponsor: *T A Re.*
- #1148 **A MULTIPLE ENDPOINT ASSAY DETERMINES STRUCTURE-SPECIFIC DAMAGE TO A HUMAN SKIN EQUIVALENT.** L S Rhoads, J Cook, R G Van Buskirk. Dept. of Biological Sciences, State University of New York, Binghamton, NY. Sponsor: *J Frazier.*

WEDNESDAY AFTERNOON, FEBRUARY 26
CONVENTION CENTER—ROOM 609

POSTER DISCUSSION SESSION: METHODS IN IMMUNOTOXICOLOGY

Chairpersons: George L. Shopp, Lovelace Medical Foundation, Albuquerque, NM and Malvin L. Stern, Medical College of Virginia, Richmond, VA

Displayed: 1:30 p.m.—4:30 p.m.

Discussion: 2:30 p.m.—4:30 p.m.

- #1149 **ALTERNATIVE RADIOISOTOPIC PROTOCOLS IN A LLNA USING DNFB AND GLUTARALDEHYDE.** M L Stern, T A Brown, and A E Munson. Pharmacology and Toxicology, Medical College of Virginia/VCU, Richmond, VA.
- #1150 **VALIDATION OF THE MURINE LOCAL LYMPH NODE ASSAY FOR CHEMICAL AND PETROCHEMICAL PRODUCTS.** P L Ribeiro, D A Edwards, R V House*, T M Soranno, M A Amoroso. Exxon Biomedical Sciences, Inc., East Millstone, NJ, and *IIT Research Institute, Chicago, IL. Sponsor: *G F Egan.*
- #1151 **HISTOLOGIC FEATURES OF POPLITEAL LYMPH NODE RESPONSES IN BROWN-NORWAY RATS.** J P Brouland, *F Verdier, C Patriarca, J Descotes. Laboratory of Immunotoxicology, INSERM U80, Lyon; and *Hazleton France, L'Arbresle, France.
- #1152 **EVALUATION OF THE VITAMIN A ENRICHED DIET IN THE DETECTION OF WEAK CONTACT SENSITIZERS.** D M Sailstad, J S Tepper, D L Doerfler and M J K Selgrade*. ManTech Environmental and *US EPA, Research Triangle Park, NC.
- #1153 **DEVELOPMENT OF AN ASSAY TO MEASURE *IN VIVO* CAPACITY TO GENERATE A CYTOLYTIC T CELL RESPONSE.** K Rodgers, M Grayson, and B H Devens. Institute of Biological Sciences, Syntex Research, Palo Alto, CA; University of California, Riverside, CA; and Livingston Research Center, University of Southern California, Los Angeles, CA.
- #1154 **DEVELOPMENT OF STANDARD OPERATING PROCEDURE FOR MEASUREMENT OF CYTOTOXIC T LYMPHOCYTE (CTL) ACTIVITY FOLLOWING *IN VIVO* ALLO-SENSITIZATION WITH P815 TUMOR CELLS.** L B Steppan, G K DeKrey and N I Kerkvliet. College of Veterinary Medicine, Oregon State University, Corvallis, OR.
- #1155 **INFLUENZA VIRUS-SPECIFIC CYTOTOXIC T LYMPHOCYTE (CTL) RESPONSE FOLLOWING INTRANASAL ADMINISTRATION OF INFLUENZA VIRUS.** G R Burleson and J P Ehrlich*. Environmental Toxicology Division, USEPA, RTP, NC; *ManTech Inc., RTP, NC.
- #1156 **THE EFFECT OF IMMUNOSUPPRESSANTS ON SERUM IMMUNOGLOBULIN LEVELS IN RECONSTITUTED IMMUNODEFICIENT MICE.** P L Pollock, D R Germolec and M I Luster. Immunotoxicology Group, NIEHS, RTP, NC.
- #1157 **CHARACTERIZATION OF THE ANTIBODY PLAQUE ASSAY FOR DETECTING IMMUNOSUPPRESSIVE CHEMICALS IN RATS.** C Smith and S E Loveless. E.I. du Pont de Nemours and Co., Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.
- #1158 **DEVELOPMENT OF ANTIGEN-SPECIFIC ELISA FOR MEASURING IMMUNOGLOBULINS TO SRBC.** L Temple, T T Kawabata*, A E Munson, and K L White, Jr. Medical College of VA/VCU, Richmond, and Procter & Gamble, Cincinnati, OH*.

WEDNESDAY AFTERNOON, FEBRUARY 26
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: RISK ASSESSMENT II

Chairperson: Elizabeth J. Hixson, Radian Corporation, Austin, TX

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 1:30 p.m.—3:00 p.m.

- #1159 **GUIDANCE FOR IDENTIFICATION OF REPRODUCTIVE AND DEVELOPMENTAL HAZARDS.** F Martz, D Oudiz, J Parker, and S DiZio. Technical Services Branch, California Dept. of Toxic Substances Control, Sacramento, CA.
- #1160 **DOSE-RESPONSE MODELING FOR DEVELOPMENTAL TOXICITY.** B C Allen, C Van Landingham, R B Howe, R J Kavlock, C A Kimmel, and E M Faustman. Clement International, Ruston, LA; Health Effects Res. Lab. USEPA, RTP, NC; Repro. and Devel. Toxicology Branch, USEPA, Washington, DC; Dept. of Env. Hlth., Univ. of Washington, Seattle, WA.
- #1161 **EXPOSURE ASSESSMENT FOR WATER CONTAMINANTS: INHALATION AND DERMAL ROUTES.** R G M Wang, N Chiu, and K Bailey. Office of Water, U.S. EPA, Washington, D.C.
- #1162 **RISK TRADEOFFS IN DRINKING WATER DISINFECTION.** J Orme, E V Ohanian and S Regli. USEPA, Office of Water, Washington, DC.

- #1163 **RISK ASSESSMENT OF DI(2-ETHYLHEXYL)ADIPATE (DEHA) IN DRINKING WATER.** *J T Du.* U.S. EPA. Office of Water, Washington, DC.
- #1164 **PROPOSED CALIFORNIA REGULATIONS FOR MULTIMEDIA RISK ASSESSMENT FOR HAZARDOUS WASTE SITES AND HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES.** *A K Klein, D Oudiz, E Butler, C B Salocks, J Carlisle, R Becker, J Wong.* Cal EPA, Dept of Toxic Substances Control, Sacramento, CA.
- #1165 **DETERMINING HAZARDS ASSOCIATED WITH MUNICIPAL SOLID WASTE COMPOSTING.** *M Eichelberger, S Richards, *J Tunkel, and **E Brady-Roberts.* Syracuse Research Corporation, Cincinnati, OH, *Syracuse, NY and **US EPA, ECAO, Cincinnati, OH. Sponsor: *P McGinnis.*
- #1166 **COMPARISON OF TWO METHODOLOGIES FOR ASSESSING HEALTH RISKS ASSOCIATED WITH INDIRECT EXPOSURES TO MSW COMBUSTION EMISSIONS.** *P McGinnis, M Eichelberger, and G Rice*.* Syracuse Research Corporation, Cincinnati, OH, Kalamazoo, MI, and *USEPA, ECAO, Cincinnati, OH.
- #1167 **PCDD AND PCDF CONCENTRATIONS IN PUGET SOUND CRABS.** *L J Yost, J E Sexton, R A Pastorok.* PTI Environmental Services, Bellevue, WA; and *J Armstrong,* EPA Region 10, Seattle, WA. Sponsor: *R A Schoof.*
- #1168 **DIFFERENTIAL PULMONARY BIOAVAILABILITY OF 2, 3, 7, 8-TCDD FROM ENVIRONMENTAL MATERIALS.** *C S Nessel, M A Amoruso, T H Umbreit, R J Meeker, M A Gallo.* Graduate Program in Public Health, UMDNJ-RW Johnson Medical School, Piscataway, NJ.
- #1169 **AMBIENT AIR CRITERIA FOR RESIDENTIAL EXPOSURE TO TETRACHLOROETHENE.** *M J Miller, K G Bogdan and N K Kim.* New York State Department of Health, Bureau of Toxic Substance Assessment, Albany, NY.
- #1170 **QUANTITATIVE UNCERTAINTY ANALYSIS OF AB 2588 DEFAULT EXPOSURE PARAMETERS.** *K M Connor, T L Copeland, A M Holbrow, D J Paustenbach.* ChemRisk, a Division of McLaren/Hart, Irvine, CA.
- #1171 **INFLUENCE OF VENTILATORY PARAMETERS AND RESPIRATORY SURFACE AREA IN DOSIMETRIC MODELS FOR RISK ASSESSMENT.** *M G Menache^a, R R Mercer^a, J S Tepper^b, L M Hanna^c, E A Gross^d, and A M Jarabek^e.* ^aDuke University Medical Center, Durham, NC, ^bManTech, Inc., RTP, NC, ^cJohns Hopkins University, Baltimore, MD, ^dChemical Industry Institute of Toxicology, RTP, NC, ^eU.S. Environmental Protection Agency, RTP, NC.
- #1172 **COMPARISON OF THE NO-OBSERVED-ADVERSE-EFFECT-LEVEL (NOAEL) AND THE LOWEST-OBSERVED-ADVERSE-EFFECT-LEVEL (LOAEL) WITH THE 10% EFFECTIVE CONCENTRATION LEVEL (EC10) IN INHALATION STUDIES OF AIR TOXICS.** *C Shoaf^a, C Spencer^b, and D Duke^c.* ^aEnvironmental Criteria and Assessment Office/RTP, ^bHealth Effects Research Laboratory, ^cManTech Environmental Technology, Inc., RTP, NC.
- #1173 **A COMPARATIVE REVIEW OF THE METABOLISM AND TOXICITY OF METAM SODIUM AND METHYLISOTHIOCYANATE.** *L Jowa, J A Wisniewski, and M J DiBartolomeis*.* Office of Environmental Health Hazard Assessment, Cal-EPA, Sacramento and *Berkeley, CA.
- #1174 **DOSE-RESPONSE EVALUATION OF METHYLISOTHIOCYANATE (MITC) RELEASED INTO THE AIR.** *D J Shusterman, G V Alexeeff and R J Jackson.* California Office of Environmental Health Hazard Assessment, Berkeley, CA.
- #1175 **METAM SODIUM AND METHYLISOTHIOCYANATE: TOXIC CHEMICAL SPILL EMERGENCY RESPONSE AND EVALUATION.** *M J DiBartolomeis, R J Jackson, H Russell, and A M Fan.* Office of Environmental Health Hazard Assessment (OEHHA), Cal-EPA, Berkeley, CA.
- #1176 **THE CANTARA INCIDENT: RISK ASSESSMENT AND INTERIM HEALTH STANDARDS FOR WATER EXPOSURES TO METAM AND METHYL-ISOTHIOCYANATE.** *R H F Lam, G A Pollock, and J P Brown.* Office of Environmental Health Hazard Assessment (OEHHA), Cal-EPA, Berkeley, CA.
- #1177 **METAM SODIUM DISPOSITION IN THE SACRAMENTO RIVER.** *R A Howd and G V Alexeeff.* Office of Environmental Health Hazard Assessment (OEHHA), CA Environmental Protection Agency, Berkeley, CA.
- #1178 **THE MATTIACE PETROCHEMICAL CO., INC. SUPERFUND SITE: A HUMAN HEALTH RISK ASSESSMENT CASE STUDY.** *A R Schnitz, M D Hartmann, R S Prann, J J Tasca, P J Wang, and N Luke.* IT Corporation, Edison, NJ.
- #1179 **TOXICITY ASSESSMENT OF HAZARDOUS WASTE SITES AT A FEDERAL FACILITY.** *R H Ross, K A Davidson, P Y Lu, and R A Young,* Biomedical and Environmental Information Analysis Section, Health and Safety Research Division, Oak Ridge National Laboratory, Oak Ridge, TN.
- #1180 **HUMAN HEALTH RISKS ASSOCIATED WITH THE CHABAROVIC WASTE SITE IN NORTHWESTERN CZECHOSLOVAKIA.** *R D Smith, D W Shelton, B D Davis, S Dwyer, J T Fleissner, and J Beba.* CH2M HILL, Englewood, CO and Aquatest, Prague, Czechoslovakia.
- #1181 **HEALTH HAZARDS OF CYANIDE-CONTAINING PESTICIDES IN STORAGE.** *C L Liao.* California Dept. of Toxic Subs. Control, Berkeley, CA. Sponsor: *R A Howard.*
- #1182 **HAZARD RANKING OF POTENTIAL LEACHING PESTICIDES.** *A K Charles and L B Johnson* Pesticide Regulation Division, Texas Department of Agriculture, Austin, TX.

#1183

BURNING OIL FIELDS IN KUWAIT: POSSIBLE INHALATION RISK TO U.S. EMPLOYEES STATIONED IN KUWAIT CITY.
W H Koch, G F Hoffnagle, and G L Ginsberg, TRC Environmental Consultants, Inc., Windsor, CT.

WEDNESDAY AFTERNOON, FEBRUARY 26
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: METALS TOXICOLOGY II

Chairpersons: Timothy P. Coogan, NCI-FCRDC, Frederick, MD and Vasken Aposhian, University of Arizona, Tucson, AZ

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 3:00 p.m.—4:30 p.m.

- #1184 **PHARMACOKINETICS OF 2,3-DIMERCAPTOPROPANE-1-SULFONIC ACID (DMPS) GIVEN IV OR PO TO HUMANS.** K M Hurlbut*, R M Maiorino*, R C Dart* and H V Aposhian*, Dept. of *Surgery, *Molecular and Cellular Biology, University of Arizona, Tucson, AZ.
- #1185 **SPECIAL ORGANOMERCURIAL-VOLATILIZING BACTERIA IN THE SEDIMENT OF MINAMATA BAY.** K Nakamura, H Uchiyama and O Yagi. National Inst. of Minamata Disease, Kumamoto and National Inst. for Environmental Studies, Onogawa, Japan. Sponsor: *C Tohyama.*
- #1186 **COMPARISON OF DIFFERENT MERCURIC COMPOUND EFFECTS ON MODEL MEMBRANES AND RED CELL MEMBRANES.** M Delnomdedieu and J W Allis. Health Effects Research Lab, US EPA RTP, NC. Sponsor: *J E Simmons.*
- #1187 **MERCURY-ENHANCED H₂O₂ FORMATION IN VIVO AND IN VITRO IN KIDNEY MITOCHONDRIA.** B-O Lund, D M Miller and J S Woods. Dept. of Environmental Health, University of Washington, Seattle, WA.
- #1188 **REACTIVITY OF Hg(II) WITH SUPEROXIDE: EVIDENCE OF A CATALYTIC DISMUTATION OF SUPEROXIDE BY Hg(II).** D M Miller, B O Lund, and J S Woods. Dept. of Environmental Health, Univ. of Washington, Seattle, WA.
- #1189 **A ROLE FOR GLUTATHIONE IN THE TRANSPORT OF METHYLMERCURY ACROSS THE BLOOD-BRAIN BARRIER.** L E Kerper, N Ballatori, and T W Clarkson. Environmental Health Sciences Center, Department of Biophysics, University of Rochester School of Medicine, Rochester, NY.
- #1190 **GLUTATHIONE-DEPENDENT BILIARY-HEPATIC RECYCLING OF METHYL MERCURY.** W J Dutczak, and N Ballatori. Dept. of Biophysics, Univ. of Rochester School of Medicine, Rochester, NY.
- #1191 **COMPARATIVE BRAIN DISTRIBUTION OF INORGANIC MERCURY (Hg²⁺) FOLLOWING SUBCHRONIC EXPOSURE TO METHYLMERCURY (MeHg) HYDROXIDE AND MERCURIC CHLORIDE IN THE MONKEY.** D Shen, T Burbacher, K Motter, L Friberg, R Body, B Lind, and M Vahter; University of Washington, Seattle, WA, and The Karolinska Institute, Stockholm, Sweden.
- #1192 **METHYL-MERCURY TRANSPORT AND TOXICITY ALONG THE ISOLATED PERFUSED RENAL PROXIMAL TUBULE OF THE RABBIT.** D W Barfuss and R K Zalups. Department of Biology, Georgia State University, Atlanta, GA and Division of Basic Medical Sciences, Mercer University School of Medicine, Macon, GA.
- #1193 **TUBULAR SECRETION AND REABSORPTION OF MERCURY COMPOUNDS IN MOUSE KIDNEY.** N Imura, T Tanaka and A Naganuma. Dept. of Public Health, Sch. of Pharmaceutical Sci., Kitasato University, Minatoku Tokyo, Japan.
- #1194 **RENAL ACCUMULATION OF METHYLMERCURY FOLLOWING A REDUCTION IN RENAL MASS.** P J Kostyniak, D W Barfuss and R K Zalups. Department of Pharmacology, SUNY at Buffalo, Buffalo, NY; Biology Department, Georgia State University, Atlanta, GA and Division of Basic Medical Sciences, Mercer University School of Medicine, Macon, GA.
- #1195 **URINARY PORPHYRIN PROFILE AS A BIOMARKER OF MERCURY EXPOSURE AND NEPHROTOXICITY.** M A Bowers, H A Davis and J S Woods. Dept. of Environmental Health, U of Washington, Seattle, WA.
- #1196 **QUANTITATIVE ANALYSIS OF PORPHYRINS IN RAT AND HUMAN URINE AND EVALUATION OF URINARY PORPHYRIN PROFILES DURING MERCURY AND LEAD EXPOSURE.** H A Davis, M A Bowers and J S Woods. Dept. of Environmental Health, Univ. of Washington, Seattle, WA.
- #1197 **ENHANCEMENT OF PHENYTOIN FETAL AND MATERNAL TOXICITY BY LOW-LEVEL EXPOSURE TO METHYLMERCURY.** S Srivasta, and P G Wells. Faculty of Pharmacy, University of Toronto, Toronto, Canada.
- #1198 **PUBERAL GROWTH RETARDATION IN PRIMATES: A LATENT EFFECT OF IN UTERO EXPOSURE TO METHYLMERCURY.** K S Grant-Webster, T M Burbacher, and N K Mottet. Department of Environmental Health, University of Washington, Seattle, WA.
- #1199 **MICROCELL-MEDIATED TRANSFER OF MAMMALIAN X CHROMOSOMES INDUCES SENESCENCE IN NICKEL-TRANSFORMED CHINESE HAMSTER CELLS.** M Costa, X Wang, X Lin, R K Bhamra, X W Lee, C B Klein. Institute of Environmental Medicine, NYU Medical Center, New York, NY.
- #1200 **SPECIES RELATED DIFFERENCES IN CHROMIUM DISTRIBUTION AFTER ORAL AND INTRAPERITONEAL ADMINISTRATION IN MICE AND RATS.** B Karagacin, S Cosentino, K S Squibb and M Costa. Institute of Environmental Medicine, NYU Medical Center, New York, NY.

- #1201 **RELATIONSHIP OF CHROMATE-INDUCED DNA DAMAGE TO CHROMOSOMAL ABERRATIONS.** J P Wise, J Xu, and S R Patierno. Department of Pharmacology, George Washington University Medical Center, Washington, DC.
- #1202 **AN SDS-PRESCRIPTION ASSAY FOR DETECTION OF CHROMATE-INDUCED DNA-PROTEIN CROSSLINKS.** A Zhitkovich, and M Costa. Institute of Environ. Med., NYU Medical Center, New York, NY.
- #1203 **CHROMIUM-51 BINDING TO DNA IN INTACT HUMAN OSTEOSARCOMA CELLS.** K Salmikow and M Costa. Institute of Environmental Medicine, New York University Medical Center, New York, NY.
- #1204 **STUDY OF CHROMIUM INDUCED AMINO ACID-DNA CROSSLINKS IN MAMMALIAN CELLS.** X Lin and M Costa, Inst. Environ. Med., NYU Medical Center, New York, NY.
- #1205 **CHROMIUM (Cr) DISTRIBUTION AFTER INTRATRACHEAL INSTILLATION OF HEXAVALENT CHROMIUM (Cr(VI)) SALTS IN RATS.** E C Faria and C M Witmer, Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ, and T Howell and S I Shupack, Villanova University, Villanova, PA.

WEDNESDAY AFTERNOON, FEBRUARY 26
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: NEUROTOXICOLOGY: TOXIC METALS

Chairperson: Michael Aschner, Albany Medical College, Albany, NY

Displayed: 1:30 p.m.—4:30 p.m.
Attended: 1:30 p.m.—3:00 p.m.

- #1206 **NEURONAL PHOSPHOLIPASE A₂ ACTIVATION BY METHYL MERCURY IS LIPOPEROXIDATION INDEPENDENT.** M A Verity, T Sarafian and A Sevanian. Div. Neuropathology, UCLA and Instit. for Toxicology, USC, Los Angeles, CA.
- #1207 **ALTERATIONS IN N-CAM EXPRESSION BY METHYLMERCURY: *IN VIVO* AND *IN VITRO* CORRELATION.** R D Graff¹, L A Lagunowich and K R Reuhl. Neurotoxicology Laboratories, Rutgers Univ. College of Pharmacy, and ¹JGPT, Piscataway, NJ.
- #1208 **EFFECTS OF METHYLMERCURY (MeHg) ON SYNAPTIC TRANSMISSION OF RAT ISOLATED HIPPOCAMPAL SLICES.** Y Yuan and W D Atchison. Dept. Pharmacology/Toxicology, Michigan State University, E. Lansing, MI.
- #1209 **GLIAL RESPONSE TO METHYL MERCURY (MeHg) IN RAT BRIAN: REGIONAL-, DOSE- AND TIME-RESPONSE.** H A N El-Fawal, A R Little, Z Gong and H L Evans. NYU Medical Center, Institute of Environmental Medicine, Tuxedo, New York.
- #1210 **EFFECTS OF MERCURY COMPOUNDS ON MUSCARINIC RECEPTOR SUBTYPES BINDING AND FUNCTION IN THE RAT BRAIN.** A F Castoldi, S M Candura, L Manzo* and L G Costa. Dept. of Environmental Health, Univ. of Washington, Seattle, WA; Fondazione Clinica del Lavoro, Pavia, Italy; and *Dept. of Pharmacology, Univ. of Pavia Medical School, Pavia, Italy.
- #1211 **DIFFERENTIAL CYTOTOXIC EFFECTS OF METHYLMERCURY AND ORGANOTIN COMPOUNDS ON MATURE AND IMMATURE NEURONAL CELLS AND NON-NEURONAL CELLS *IN VITRO*.** M Kunitomo and T Miura. Natl. Inst. Environ. Stud., Tsukuba, Japan. Sponsor: K T Suzuki
- #1212 **EFFECTS OF *IN UTERO* METHYLMERCURY EXPOSURE ON A DELAYED SPATIAL ALTERNATION TASK IN MONKEYS.** T M Burbacher, S G Gilbert, L M Howard and C D Munkers. Department of Environmental Health, University of Washington, Seattle, WA.
- #1213 **METHYLMERCURY (MeHg)—INDUCED INCREASES IN [Ca²⁺] IN NG108—15 CELLS ARISE FROM EXTRA- AND INTRACELLULAR SOURCES.** M F Hare and W D Atchison. Dept. Pharm. Tox., Michigan State University, E. Lansing, MI.
- #1214 **PRENATAL EXPOSURE TO METHYLMERCURY ALTERS OPERANT BEHAVIOR AND RESPONSE TOPOGRAPHY IN SQUIRREL MONKEYS.** B Logdberg, M C Newland, Y Sheng, M Berlin, B Weiss. Lund University, Sweden; Auburn University, AL; U of Rochester, NY.
- #1215 **INTERACTION OF INORGANIC MERCURY WITH CELL SIGNALING SYSTEMS IN Pc12 Cells.** A D Rossi, L Manzo, M Vahter, O Larsson, P O Bergreen, S Orrenius, and P Nicotera. Dept. of Toxicology, Karolinska Institutet, Stockholm, Sweden.
- #1216 **DEVELOPMENTAL EXPOSURE TO LEAD IN THE MONKEY AFFECTS PATTERN OF WATER CONSUMPTION.** D C Rice. Health and Welfare, Ottawa, ONT, Canada, and R B Mailman. University of North Carolina, Chapel Hill, NC.
- #1217 **PRENATAL LEAD EXPOSURE ALTERS OPERANT BEHAVIOR IN SQUIRREL MONKEYS.** M C Newland, B Logdberg, Y Sheng, M Berlin, B Weiss. Auburn U., AL; Lund University Sweden; U. of Rochester, NY.
- #1218 **LEAD (Pb) ATTENUATES MK-801'S EFFECTS ON A MULTIPLE REPEATED ACQUISITION (RA) AND PERFORMANCE (P) SCHEDULE.** J Cohn, and D A Cory-Slechta. Environmental Health Sciences Center, Univ. Rochester Med. Ctr., Rochester, NY.
- #1219 **DEVELOPMENTAL NEUROTOXICITY EVALUATION OF LEAD NITRATE IN CrI:CD*BR VAF/Plus* RATS.** J A Foss, A A Hoberman, and M S Christian. Argus Research Laboratories Inc., Horsham, PA.
- #1220 **LEAD INTERFERES WITH CALCIUM-DEPENDENT ADHESION MOLECULES ON NEURAL CELLS *IN VITRO*.** L A Lagunowich and K R Reuhl. Neurotoxicology Laboratories, Rutgers Univ. College of Pharmacy, Piscataway, NJ.

- #1221 **LEAD DIRECTLY INHIBITS ISOLATED ROD PHOTORECEPTOR cGMP PHOSPHODIESTERASE (cGMP-PDE): MAGNESIUM INTERACTIONS.** *D Srivastava*¹, R L Hurwitz², and *D A Fox*¹. ¹University of Houston College of Optometry and ²Dept. of Pediatrics and Cell Biology, Baylor College of Medicine, Houston, TX.
- #1222 **POST WEANING LEAD (Pb) ALTERS DOPAMINE (DA) B₂ MAX AND REGULATION.** *D V Widzowski*, M J Pokora and *D A Cory-Slechta*. Environmental Health Sciences Center, Univ. of Rochester Med. School, Rochester, NY.
- #1223 **POSTNATAL LEAD (Pb) EXPOSURE INDUCES A SUSTAINED FUNCTIONAL D₂ DOPAMINERGIC (DA) SUPERSENSITIVITY.** *D A Cory-Slechta*, M J Pokora, and *D V Widzowski*. Environmental Health Sciences Center, Univ. of Rochester Med. School, Rochester, NY.
- #1224 **ATP INHIBITS LEAD-MEDIATED INCREASE IN INOSITOL 1,4,5-TRISPHOSPHATE AND 1,3,4,5-TETRAKISPHOSPHATE RECEPTOR BINDING IN RAT CEREBELLUM.** P J S Vig and *D Desai*^{ah}. Dept. of Neurology, Univ. of Mississippi Medical Center, Jackson, MS.
- #1225 **INHIBITION OF NOREPINEPHRINE-STIMULATED INOSITOL (1,4,5) TRISPHOSPHATE FORMATION BY LEAD IN PRIMARY ASTROCYTE CULTURES.** D Vitarella, *J L Aschner, **H K Kimelberg and *M Aschner*. Departments of Pharmacology and Toxicology, *Pediatrics, and **Division of Neurosurgery, Albany Medical College, Albany Medical College, Albany, NY.
- #1226 **CHRONIC EXPOSURE TO ENVIRONMENTAL LEVELS OF LEAD (Pb) IMPAIRS INDUCTION OF LONG-TERM POTENTIATION (LTP) IN RAT HIPPOCAMPUS.** *S M Lasley*, J Polan-Curtain and *D L Armstrong*. Dept. Basic Sci., U. Illinois Coll. of Med., Peoria, IL; and Div. Life Sci., U. Texas-San Antonio, San Antonio, TX.
- #1227 **GLIAL RESPONSE TO TRIMETHYL LEAD (TMPb) IN THE MACAQUE MONKEY.** *H L Evans*, *B S Jortner*¹ and *H A N El-Fawal*. NYU Inst Environ Med, Tuxedo, NY and ¹Virginia Tech, Blacksburg, Va.

WEDNESDAY AFTERNOON, FEBRUARY 26
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: NEUROTOXICOLOGY II

Chairperson: Merle G. Paule, USFDA, Jefferson, AR

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 3:00 p.m.—4:30 p.m.

- #1228 **ROLE OF RAT BRAIN LIPOXYGENASE IN XENOBIOTIC OXIDATION: ALDRIN EPOXIDATION.** K Datta, A K Naidu, A K Naidu, and *A P Kulkarni*. Florida Toxicology Research Center, College of Public Health, University of South Florida, Tampa, FL.
- #1229 **PYRETHROIDS CAUSE ACTIVATION OF PROTEIN KINASE C PATHWAY IN THE RAT BRAIN SYNAPSE.** E Enan and *F Matsumura*. Dept. of Environmental Toxicology, University of California, Davis, CA.
- #1230 **IN VITRO EFFECTS OF TRIOTANOTINS ON INOSITOL 1,4,5-TRISPHOSPHATE RECEPTOR BINDING IN RAT BRAIN.** S N Pentyala, D E Sekhon*, and *D Desai*^{ah}. Dept. of Neurology, University of Mississippi Medical Center, Jackson, MS; and *Dept. of Biology, Jackson State University, Jackson, MS.
- #1231 **EFFECT OF REPEATED ORGANOPHOSPHATE ADMINISTRATION ON CARBACHOL-STIMULATED PHOSPHOINOSITIDE METABOLISM IN RAT BRAIN.** *W R Mundy*, T R Ward, V Forbis, and *H A Tilson*. Neurotoxicology Division, US Environmental Protection Agency, Research Triangle Park, NC.
- #1232 **SUSTAINED EFFECTS OF PILOCARPINE ON BRAIN INOSITOL LIPID SIGNALING AND TOTAL TISSUE CALCIUM IN YOUNG AND AGED RATS.** M R Hirvonen and *K Savolainen*. Natl. Publ. Hlth. Inst., Dept. Env. Hyg. Toxicol., Kuopio, Finland.
- #1233 **IN VIVO EFFECTS OF ORGANOCHLORINE PESTICIDES ON INOSITOL POLYPHOSPHATE RECEPTOR BINDING AND METABOLISM IN RAT BRAIN.** B D Mehrotra, P J S Vig* and *D Desai*^{ah}. Dept. of Chemistry, Tougaloo College, Tougaloo, MS and *Dept. of Neurology, Univ. of Mississippi Medical Center, Jackson, MS.
- #1234 **EFFECT OF DOXORUBICIN ON ENDOTHELIN-1 BINDING AND PROTEIN KINASE C ACTIVITY IN RAT BRAIN.** C V K Mydhili, P J S Vig and *D Desai*^{ah}. Dept. of Neurology, Univ. of Mississippi Medical Center, Jackson, MS.
- #1235 **INCREASED TOXICITY OF TRIMETHYLtin (TMT) AND DECREASED C-FOS IN AGED RAT HIPPOCAMPUS.** A C Scallet, N Pothuluri, S I Nikonov¹, F A Caputo, R L Rountree, J C Matthews², and *R W Hart*. National Center for Toxicological Research, Jefferson, AR; ¹Academy of Sciences of USSR, Moscow; and ²University of Mississippi, University, MS.
- #1236 **DIFFERENTIAL INDUCTION OF C-FOS PROTEIN IN THE CNS FOLLOWING ACUTE EXPOSURE TO KCN.** G Pavlakovic, A Rathinavelu and *G E Isom*. Dept. of Pharmacology and Toxicology, School of Pharmacy and Pharmacol. Sciences, Purdue Univ., West Lafayette, IN.
- #1237 **ROLE OF DOPAMINE-1 (D1) RECEPTORS IN COCAINE (COC) TOXICITY MEDIATED BY CENTRAL AND PERIPHERAL ACTIONS OF COCAINE.** J M Witkin and J L Katz. Drug Development Group, Psychobiology Laboratory, NIDA Addiction Research Center, Baltimore, MD. Sponsor: *J M Witkin*.

- #1238 **EFFECTS OF ACUTE COCAINE ADMINISTRATION ON BRAIN COCAINE RECEPTORS IN WISTAR-KYOTO (WKY) AND SPONTANEOUSLY HYPERTENSIVE RATS (SHR).** C Jin, R W Rockhold, B Hoskins and I K Ho. Department of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, MS.
- #1239 **PERINATAL EXPOSURE TO AROCLOR 1016 ELEVATES BRAIN DOPAMINE CONCENTRATION IN THE RAT.** R F Seegal. Wadsworth Center, NYS Dept. of Health and Dept. of Environ. Hlth. and Toxicol., School of Public Health, University at Albany, Albany, NY.
- #1240 **INTRASTRIATAL INJECTION OF PCBs DECREASES STRIATAL DOPAMINE CONCENTRATIONS IN RATS.** M A Chishti and R F Seegal. Wadsworth Center, NYS Dept. of Health and Dept. of Environ. Hlth. Toxicol., School of Public Health, University at Albany, Albany, NY.
- #1241 **EFFECTS OF DISULFIRAM ON RAT HIPPOCAMPAL MITOCHONDRIA: METABOLIC COMPARTMENTATION OF NEUROTOXICITY.** J Simonian, D Haldar, E Delmaestro and L Trombetta. St. John's Univ. College of Pharmacy and Allied Health Professions and Dept. of Biological Sciences, NY, NY.
- #1242 **EFFECTS OF DISULFIRAM ON RAT HIPPOCAMPAL AND CEREBELLAR GLUTATHIONE PEROXIDASE (GSH-Px) ACTIVITY.** E Delmaestro and L Trombetta. St. John's Univ. College of Pharmacy and Allied Health Professions, NY, NY.
- #1243 **EFFECT OF CYANIDE ON PLASMA MEMBRANE POTENTIAL OF PC12 CELLS: INVOLVEMENT OF POTASSIUM CHANNELS.** M V Latha, J L Borowitz, G K W Yim and G E Isom. Department of Pharmacology and Toxicology, School of Pharmacy and Pharmacal Sciences, Purdue University, West Lafayette, IN.
- #1244 **POTASSIUM, GLUTAMATE, AND ASPARTATE HOMEOSTASES IN RAT PRIMARY ASTROCYTE CULTURES ARE ALTERED BY TRIMETHYL TIN (TMT).** M Aschner, M Gannon, and H K Kimelberg. Dept. of Pharmacology and Toxicology, and Division of Neurosurgery, Albany Medical College, Albany, NY.
- #1245 **ALTERNATING HIGH AND LOW PROTEIN FEEDING ENHANCES TRIMETHYLTIN TOXICITY IN THE RAT.** J C Matthews¹ and A C Scallet². ¹Dept. Pharmacol., Univ. of MS, Sch. of Pharmacy and Res. Inst. Pharmaceut. Sci., University, MS, and ²Div. of Repro. and Devel. Toxicol., Nat'l. Cent. for Toxicological Res., Jefferson, AR. Sponsor: M C Wilson.
- #1246 **TRIAKYL TINS DISRUPT OUTER HAIR CELLS *IN VITRO*.** W J Clerici and L D Fechter. Division of Toxicological Sciences, The Johns Hopkins School of Hygiene and Public Health, Baltimore, MD.
- #1247 **STRAIN COMPARISONS OF TRIMETHYLTIN (TMT) NEUROTOXICITY IN RATS.** R C MacPhail¹, K M Crofton, C J Gordon, V C Moser and J P O'Callaghan. U.S. EPA and ManTech Environmental Technology, RTP, NC.
- #1248 **THE RESPONSE OF GLIAL FIBRILLARY ACIDIC PROTEIN (GFAP) IN FOUR BRAIN REGIONS OF ATLANTIC TOMCOD EXPOSED TO PCB.** A R Little, J S Duffy¹, H A N El-Fawal, I Wirgin, and H L Evans. New York Univ. Med. Ctr., Institute of Environmental Medicine, Tuxedo, NY, ¹Texaco Inc., Beacon, NY.
- #1249 **NEUROTOXICITY OF PODOPHYLLOTOXIN IN RATS.** L W Chang, C M Yang, and J F Deng, Univ. of Arkansas for Medical Sciences, Little Rock, AR, Chang-Gung Medical College, and Taipei General VA Hospital, Taipei, Taiwan.
- #1250 **AGE RELATED SUSCEPTIBILITY TO MPTP-INDUCED NEUROTOXICITY.** S F Ali, S David, G D Newport and W Slikker, Jr. Div. Reprod. and Dev. Toxicol., NCTR, Jefferson, AR.
- #1251 **YELLOW STAR THISTLE AND NIGROPALLIDAL ENCEPHALOMALACIA: SEARCH FOR CULPABLE NEUROTOXIN(S).** D N Roy, P S Spencer, *A M Craig, *L L Blythe, C N Allen, M Lefor, M Seelig, R Kayton. Center for Research on Occupational and Environmental Toxicology, Oregon Health Sciences University, Portland, and *School of Veterinary Medicine, Oregon State University, Corvallis, Oregon.
- #1252 **GLUTATHIONE S-TRANSFERASE (GST) ISOENZYME PROFILES AND ACTIVITY IN BRAIN REGIONS OF THE GUNN RAT.** J A Johnson, A El Barbary, S E Kornguth, J F Brugge and F L Siegel. Depts. of Pediatrics, Physiological Chemistry, Neurology and Neurophysiology, the Environmental Toxicology and Waisman Centers, University of Wisconsin, Madison, WI. Sponsor: C R Jefcoate.
- #1253 **EVALUATION OF ACRYLAMIDE NEUROTOXICITY USING THE *IN VITRO* HIPPOCAMPAL SLICE PREPARATION.** S B Fountain, B S Toner, and J D Rowan. Department of Psychology, Kent State University, Kent, OH. Sponsor: Z Annau.
- #1254 **PERSISTENT BEHAVIORAL AND NEUROCHEMICAL CHANGES INDUCED BY ONE EXPOSURE TO CHLORPYRIFOS.** P J Bushnell^{1,2}, K L Kelly², C N Pope³ and S Padilla¹. ¹Neurotoxicology Division, U.S. EPA, RTP, NC, ²ManTech Environmental Technology Inc., RTP, NC, and ³School of Pharmacy, Northeast Louisiana University, Monroe, LA.
- #1255 **NEUROTOXICITY STUDIES IN SPRAGUE-DAWLEY RATS WITH TRIBUTYL PHOSPHATE.** C E Healy¹, P Beyrouty², G Losos², and B R Broxup². ¹Monsanto Company, St. Louis, MO and ²Bio-Research Laboratories Ltd., Senneville, Quebec, Canada.
- #1256 **FUNCTIONAL-MORPHOLOGICAL EFFECTS OF TRIPHENYL PHOSPHITE IN RATS.** E J Lehning, J L Mattson, P J Spencer, and K E Stebbins. Dept. Animal Science, Michigan State Univ., E. Lansing, MI and Dow Chemical Company, Midland, MI.
- #1257 **ACUTE CHLORPYRIFOS TREATMENT PRODUCES LONG-TERM NEUROCHEMICAL AND NEUROBEHAVIORAL EFFECTS IN ADULT RATS.** C N Pope, D P Arthun, T K Chakraborti, J D Farrar. School of Pharmacy, Northeast LA Univ., Monroe, LA.

- #1258 **SYNERGISTIC NEUROTOXIC EFFECTS OF STYRENE OXIDE AND ACRYLAMIDE ON THE RAT CEREBELLUM.** R Mandella, C M Beiswanger, T Roscoe, K R Reuhl and H E Lowndes. Neurotoxicology Laboratories, Rutgers University College of Pharmacy, and JGPT, Piscataway, NJ.
- #1259 **EFFECTS OF SEX AND ROUTE OF ADMINISTRATION ON THE TIME COURSE OF ESTERASE INHIBITION FOLLOWING METHYL PARATHION AND METHYL PARAOXON ADMINISTRATION.** G N Ramaswamy and J E Chambers. College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.
- #1260 **GLYCIDAMIDE, AND ACRYLAMIDE METABOLITE PRODUCES NEUROTOXICITY IN RATS.** M B Abou-Donia, S E Ibrahim, J Knoth-Anderson, L Lack. Duke Univ Med Ctr, Durham, NC and M A Friedman, American Cyanamid, Wayne, NJ.
- #1261 **CHARACTERIZATION AND FORENSIC APPLICATION OF REACTIVATION PROCESSES FOR CARBAMATE-INHIBITED CHOLINESTERASE.** M J Hooper and K A Hunt. Dept. of Environ., Tox., Clemson Univ., Clemson, SC. Sponsor: J F Hobson.
- #1262 **MODIFICATION OF MIPAFIX-INDUCED INHIBITION AND AGING OF NTE IN NEUROBLASTOMA CELLS.** A C Nostrand and M Ehrlich. VA-MD Regional College of Veterinary Medicine, Blacksburg, VA.
- #1262-A **INHIBITION AND AGING OF ACETYLCHOLINESTERASE IN CENTRAL AND PERIPHERAL TISSUES FOLLOWING SINGLE EXPOSURE TO CHLORPYRIFOS.** R L Carr and J E Chambers. College of Veterinary Medicine, Mississippi State University, Mississippi State, MS. (This abstract is #68 in *The Toxicologist*.)

WEDNESDAY AFTERNOON, FEBRUARY 26
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: BIOTRANSFORMATION II

Chairperson: Alan Wilson, Monsanto, St. Louis, MO

Displayed: 1:30 p.m.—4:30 p.m.
Attended: 1:30 p.m.—3:00 p.m.

- #1263 **TEMPERATURE ACCLIMATION DIFFERENTIALLY MODULATES METABOLIC PATHWAYS FOR AFLATOXIN B₁ (AFB₁) IN RAINBOW TROUT.** Q Zhang, C El-Zahr, H M Carpenter, D S Selivonchick, and L R Curtis. Oak Creek Laboratory of Biology and Marine/Freshwater Biomedical Center, Oregon State University, Corvallis, OR.
- #1264 **METABOLISM OF [3-¹⁴C] COUMARIN BY HEPATIC MICROSOMES FROM THE RAT, SYRIAN HAMSTER, MONGOLIAN GERBIL AND MAN.** D G Walters, *D J Osborne, R J Price, S D Gangolli, and B G Lake. BIBRA Toxicology International, Carshalton, Surrey, England and *Lilly Research Centre, Ltd., Windlesham, Surrey, England.
- #1265 **NADPH-DEPENDENT FORMATION OF AFLATOXICOL (AFL) FROM AFLATOXIN B₁ (AFB₁) IN GUINEA PIG KIDNEY MICROSOMES.** L Liu, K Nakatsu, and T E Massey. Departments of Pharmacology and Toxicology, and Medicine, Queen's University, Kingston, ON, Canada.
- #1266 **THE EFFECT OF SPIRONOLACTONE ON THE METABOLISM OF THE PYRROLIZIDINE ALKALOID SENECONINE IN GUINEA PIG AND RAT.** W G Chung and D R Buhler. Toxicology Program, Oregon State University, Corvallis, OR.
- #1267 **ACTIVATION OF AFLATOXIN B₁ (AFB₁) IN ISOLATED RABBIT LUNG CELL MICROSOMES AND THE EFFECTS OF β-NAPHTHOFLAVONE (BNF) TREATMENT.** J M Daniels and T E Massey. Departments of Pharmacology, Toxicology, and Medicine, Queen's University, Kingston, ON, Canada.
- #1268 **METABOLISM OF N-(3,5-DICHLOROPHENYL) SUCCINIMIDE (NDPS) BY FRESHLY ISOLATED RAT LIVER CELLS.** A K Nyarko, and P J Harvison. Philadelphia College of Pharm. and Science, Philadelphia, PA.
- #1269 **FORMATION OF HYDROQUINONE FROM THE O-DEALKYLATION OF P-METHOXYPHENOL BY RAINBOW TROUT MICROSOMES.** J M Dady¹, M M Voit¹, and S B Bradbury². ¹University of Wisconsin, Superior, WI; ²US EPA Environmental Research Laboratory, Duluth, MN.
- #1270 **DEVELOPMENTAL REGULATION OF FLAVIN-CONTAINING MONOOXYGENASE (FMO) IN LUNG OF FETAL AND NEONATAL RABBITS.** D E Williams, M-Y Lee, R N Hines and D M Stresser. Toxicology Program, Oregon State University, Corvallis, OR and Dept. of Pharmacology, Wayne State Univ., Detroit, MI.
- #1271 **BIOACTIVATION OF THE PNEUMOTOXIN, BUTYLATED HYDROXYTOLUENE (BHT), BY MOUSE BRONCHIOLAR CLARA CELLS.** J L Bolton, A M Malkinson, J A Thompson. Molecular Toxicology and Environmental Health Sciences Program, University of Colorado, Boulder, CO.
- #1272 **METABOLISM OF NAPHTHALENE IN THE ISOLATED PERFUSED MOUSE LIVER: EFFLUX OF NAPHTHALENE OXIDE.** L Tsuruda, M Lame, P Brennan, A Ko, and A Buckpitt. Dept. of Veterinary Pharmacology and Toxicology, University of California, Davis, CA.
- #1273 **METABOLISM OF [¹⁴C]-1,3-DINITROBENZENE BY RAT SMALL INTESTINE.** P C Adams and D E Rickert. Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC and Department of Drug Metabolism, Glaxo, Inc., Research Triangle Park NC.
- #1274 **INFLUENCE OF PARTICLES ON BENZO(A)PYRENE METABOLISM.** D Warshawsky, R Reilman, J Cheu, and M Radike. University of Cincinnati Medical Center, Cincinnati, OH.

- #1275 CYTOCHROME P450 (P450)-DEPENDENT METABOLISM OF ARACHIDONIC ACID (AA) IN GUINEA PIG LIVER: EFFECT OF ISOZYME SELECTIVE INHIBITORS. L C Knickle, C D Webb and J R Bend. Dept. of Pharmacology and Toxicology, University of Western Ontario, London, Canada.
- #1276 EFFECT OF CALORIC RESTRICTION ON THE METABOLISM OF 7-BROMO-AND 7-FLUOROBENZ[A]ANTHRACENE BY MALE B6C3F₁ MOUSE LIVER MICROSOMES: REDUCTION OF METABOLIC ACTIVATION PATHWAY. Y Xiao, L S von Tungeln, M W Chou, R W Hart and P P Fu. National Center for Toxicological Research, Jefferson, AR. Sponsor: D W Roberts.
- #1277 DETERMINATION OF METABOLIC RATE CONSTANTS USING THE VIAL EQUILIBRATION TECHNIQUE: VEHICLE EFFECTS. C Kim, S Muralidhara, R Manning, R Brown*, and J V Bruckner. Department of Pharmacology & Toxicology, University of Georgia, Athens, GA and *Technical Resources, Inc., Rockville, MD.
- #1278 COMPARISON OF RAT LIVER AND TESTICULAR ESTERASES BY RECOMBINANT DNA TECHNIQUES. B Yan, M Brady and A Parkinson. University of Kansas Medical Center, Kansas City, KS.
- #1279 METABOLISM OF CYCLOPHOSPHAMIDE (CP) BY PEROXIDASES. S Kanekal, L Fraiser, J Davis and J P Kehrer. Division of Pharmacology and Toxicology, College of Pharmacy, University of Texas at Austin, Austin, TX.
- #1280 LIPOXYGENASE—A NOVEL PATHWAY FOR XENOBIOTIC OXIDATION IN HUMAN TERM PLACENTA. P Joseph, N S Srinivasan and A P Kulkarni. Toxicology Program, College of Public Health, University of South Florida, Tampa, FL.
- #1281 PEROXIDASE CATALYZED CHEMICAL OXIDATION IN HUMAN FETUS DURING ORGANOGENESIS PERIOD. N S Srinivasan, P Joseph and A P Kulkarni. Toxicology Program, College of Public Health, University of South Florida, Tampa, FL.
- #1282 HUMAN PLACENTAL PEROXIDASE CATALYZED OXIDATION AND COVALENT BINDING OF 2-AMINOFLUORENE. K Murthy and A P Kulkarni. Florida Toxicology Research Center, College of Public Health, University of South Florida, Tampa, FL.

WEDNESDAY AFTERNOON, FEBRUARY 26
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: *IN VITRO* DEVELOPMENTAL TOXICOLOGY

Chairpersons: Randolph B. Sleet, Research Triangle Institute, Research Triangle Park, NC and George P. Daston, Procter & Gamble, Cincinnati, OH

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 3:00 p.m.—4:30 p.m.

- #1283 EMBRYOTOXICITY OF CHLOROQUINE (CQ): ALTERATIONS OF VISERAL YOLK SAC (VYS) FUNCTION *IN VITRO*. J L Ambroso and C Harris. Toxicology Program, Dept. of Environmental and Industrial Health, The University of Michigan, Ann Arbor, MI.
- #1284 GLUTATHIONE (GSH) BIOSYNTHESIS IN THE POSTIMPLANTATION RAT CONCEPTUS *IN VITRO*. C Harris. Toxicology Program, Dept. of Environmental and Industrial Health, University of Michigan, Ann Arbor, MI.
- #1285 GLUTATHIONE CONJUGATION PROTECTS EMBRYOS FROM EFFECTS OF 2-BROMOHYDROQUINONE (BHQ) *IN VITRO*. J E Andrews, J M Rogers, M Ebron-McCoy and S S Lau¹. Developmental Toxicology Division, US EPA, RTP, NC; ¹Division of Pharmacology and Toxicology, College of Pharmacy, Univ. of Texas, Austin, TX.
- #1286 CHANGES IN HSP 70 IN OCHRATOXIN A TREATED EMBRYOS *IN VITRO*. E E Smith, C E Braithwaite, M H Small, T D Phillips¹, and A H Reine. Prairie View A&M University, Prairie View, TX; ¹Texas A&M University, College Station, TX.
- #1287 *IN VITRO* HEAT SHOCK PRODUCES ALTERATIONS IN CYTOSKELETAL PROTEINS IN CULTURED RAT EMBRYOS. B R Fisher¹, K M Brown², and D L Heredia¹. ¹Center for Devices and Radiological Health, FDA, Rockville, MD; ²Department of Biological Sciences, The George Washington University, Washington, DC. Sponsor: P L Goering¹.
- #1288 INTRAAMNIOTIC MICROINJECTIONS OF 4-OXO-ALL-TRANS-RETINOIC ACID, 4-OXO-13-CIS-RETINOIC ACID AND ALL-TRANS-RETINOIC ACID PLUS URIDINE 5'-DIPHOSPHO-GLUCURONIC ACID IN CULTURED RAT CONCEPTUSES. J Creech Kraft, R Bechter*, Q P Lee, and M R Juchau. Dept. of Pharmacology, University of Washington, Seattle, WA and *Drug Safety Assessment, Sandoz Pharm. Ltd., Basel, Switzerland.
- #1289 PHARMACOKINETICS OF ETHANOL INDUCED MALFORMATIONS *IN VITRO*. E S Hunter, J A Tugman, K K Sulik*, and T W Sadler*. National Toxicology Program, NIEHS, RTP, NC; *Dept. of Cell Biology and Anatomy, UNC, Chapel Hill, NC. Sponsor: R E Chapin.
- #1290 EVALUATION OF A FISH EMBRYO-LARVAL DEVELOPMENT ASSAY USING SIX COMPOUNDS RECOMMENDED FOR *IN VITRO* TERATOGENESIS TEST VALIDATION. W J Birge and E M Silberhorn. Graduate Center for Toxicology, University of Kentucky, Lexington, KY. Sponsor: L W Robertson.
- #1291 TERATOGENIC EFFECTS OF RETINOIC ACID IN AN *IN VITRO* RAT WHOLE EMBRYO CULTURE SYSTEM. T Thomas, D L Luchtel and E M Faustman. Dept. of Environmental Health, Univ. of Washington, Seattle, WA.
- #1292 DEVELOPMENTAL TOXICITY OF STYRENE OXIDE IN THE POST-IMPLANTATION EMBRYO CULTURE. C Gregotti, L Manzo, L G Costa, and E M Faustman. Department of Pharmacology, University of Pavia, Pavia, Italy and Department of Environmental Health, University of Washington, Seattle, WA.

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- #1293 **EFFECTS OF FOUR ALKYLATING AGENTS ON *IN VITRO* RAT EMBRYO DIFFERENTIATION.** *M R Seeley, S M Silbernagel, C Sweeney, and E M Faustman.* Department of Environmental Health, University of Washington, Seattle, WA.
- #1294 **TERATOGENIC EFFECTS OF TOLBUTAMIDE IN MOUSE EMBRYOS *IN VITRO*.** I W Smoak. Dept. of Anatomy, Physiological Sciences, and Radiology, North Carolina State University, College of Veterinary Medicine, Raleigh, NC. Sponsor: *C F Brownie.*
- #1295 **AN INVESTIGATION OF THE TERATOGENICITY OF THE PLANT HORMONE, ABSICISIC ACID (ABA) AND AN ANALOG OF ABA USING A CHICK EMBRYO *IN VITRO* TEST.** *A Kerviche¹, C G Rousseaux¹, and L V Gusta².* Dept. Veterinary Pathology, Toxicology Programme¹ and Crop Development Centre², University of Saskatchewan, Saskatoon, SK.
- #1296 **EFFECTS OF PATULIN ON POSTIMPLANTATION RAT EMBRYOS.** M H Small, E E Smith, C E Braithwaite, *T D Phillips¹*, and A H Reine. Prairie View A&M University, Prairie View, TX; ¹Texas A&M University, College Station, TX.
- #1297 **FLUORANTHENE—INDUCED PERTURBATION OF *IN VITRO* MOUSE EMBRYO DEVELOPMENT.** T R Irvin, P C Mertes, P R Iyer and J E Martin*. LSU-Inst. of Environmental Studies and Dept. of Veterinary Anatomy*, Louisiana State Univ., Baton Rouge, LA. Sponsor: *T D Phillips.*
- #1298 **CHROMOSOMAL DAMAGE TO PREIMPLANTATION EMBRYOS *IN VITRO* BY AFLATOXIN B1.** T R Irvin, L S Gollahon, P R Iyer and J E Martin*. Inst. for Environmental Studies, LSU and Dept. of Veterinary Anatomy*, Louisiana State Univ., Baton Rouge, LA. Sponsor: *T Phillips.*
- #1299 **THE EFFECT OF SELENIUM METHIONINE AND SODIUM SELENITE ON MURINE LIMB DEVELOPMENT IN CULTURE.** M J Politis, J Keiner, and C G Rousseaux. Department of Veterinary Pathology, WCVI, University of Saskatchewan, Saskatoon, SK.

WEDNESDAY AFTERNOON, FEBRUARY 26
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: ENVIRONMENTAL TOXICOLOGY

Chairpersons: Jon C. Mirsalis, SRI International, Menlo Park, CA and James A. Hampton, Medical College of Ohio, Toledo, OH

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 1:30 p.m.—3:00 p.m.

- #1300 **LOCALIZATION OF CADMIUM IN THE EARTHWORM, *EISENIA FETIDA*.** *M E Honeycutt, and B L Roberts.* Department of Pharmacology/Toxicology, Northeast Louisiana University, Monroe, LA.
- #1301 **AN IMPROVED METHOD FOR ANALYSIS OF NITROBENZENES IN SOILS.** J E Preslan, B B Hatrel, L E White, and W J George. Departments of Pharmacology/Toxicology and Environmental Health Sciences, Tulane University, New Orleans, LA.
- #1302 **TRICHLOROETHYLENE IN SOIL: PLANT UPTAKE, TOXICITY, AND BIODEGRADATION IN THE RHIZOSPHERE.** *B T Walton,* Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN; *T A Anderson,* the University of Tennessee, Knoxville; *D J Deckert,* Westmont College, Santa Barbara, CA; and *M S Jen,* California State University, Los Angeles, CA.
- #1303 **STUDY ON THE ETHOLOGY OF CRUDE OIL INGESTION BY CATTLE.** *R W Coppock, L Z Florence, C G Miller, A A Khan,* and *D L Fritz.* Animal Sciences Division, Alberta Environmental Centre, Vegreville, AB, Canada.
- #1304 **KINETICS OF ACETONITRILE DEGRADATION BY IMMOBILIZED CELLS OF *PSEUDOMONAS PUTIDA*.** R Williams, G R V Babu, E Hall and K D Chapatwala. Selma Univ., Selma AL. Sponsor: *D Desai.*
- #1305 **ENCAPSULATION OF THIOSULFONATES AND CYANIDE-SULFURTRANSFERASE BY MOUSE CARRIER ERYTHROCYTES.** I Petrikovics, W D McGuinn, E P Cannon, A J Hawkins, L Pei, and J L Way. Dept. of Medical Pharmacology and Toxicology, Texas A&M University College of Medicine, College Station, TX.
- #1306 **O-DEALKYLATION OF RESORUFIN ETHERS AS AN INDICATION OF CYTOCHROME P450 INDUCTION IN *SIGMODON HISPIDUS* (COTTON RAT): A METHOD FOR MONITORING ENVIRONMENTAL CONTAMINATION.** *C W Qualls Jr¹, C S Elangbam¹, R L Lochmiller², J W Lish¹.* Oklahoma State University; ¹Dept. of Veterinary Pathology and ²Dept. of Zoology, Stillwater, OK. Sponsor: *S Sangiah.*
- #1307 **NITROGEN DIOXIDE EFFECTS IN NEONATE FERRET LUNG.** R E Rasmussen, E Escano, and S H Pyo. Department of Community and Environmental Medicine, University of California, Irvine, CA. Sponsor: *D B Menzel.*
- #1308 **WOOD STOVE VS OIL FURNACE EMISSIONS: RELATIVE IMPACT ON RAT LUNG FUNCTION AND STRUCTURE.** D W Winsett, *J S Tepper, J McGee,* and *D L Costa*.* ManTech Environmental and *EPA, RTP, NC.
- #1309 **DEGRADATION OF AZO DYES BY ENVIRONMENTAL MICROORGANISMS AND HELMINTHS.** K T Chung and S E Stevens, Jr. Department of Biology, Memphis State University, Memphis, TN. Sponsor: *W H Lawrence.*
- #1310 **HEPATIC BIOCHEMICAL EFFECTS IN CATTLE EXPOSED TO METHANOL AND DIETHYLENE GLYCOL.** A A Khan, *R W Coppock* and *M M Schuler.* Animal Sciences Division, Alberta Environmental Centre, Vegreville, Alberta, Canada.
- #1311 **SOME FACTORS INVOLVED IN THE HYDRIDE GENERATION OF ALKYLARSINES.** M S Smith¹, P R Jones², and D Y Shirachi ¹Dept. of Physiology and Pharmacology, ²Dept. of Chemistry, Univ. of the Pacific, Stockton, CA. Sponsor: *N El Sayed.*

- #1312 **URINARY MUTAGENS IN MUNICIPAL REFUSE INCINERATOR WORKERS AND WATER TREATMENT WORKERS.** X Ma, J G Babish, J M Scarlett. Departments of Veterinary Pharmacology and Epidemiology, NYS College of Veterinary Medicine; W H Gutenmann, D J Lisk. Toxic Chemicals Laboratory, NYS College of Agriculture and Life Sciences, Cornell University, Ithaca, NY.
- #1313 **TOXICOLOGICAL EVALUATION OF A WATER RESOURCE RECOVERY PILOT PLANT.** M A Pereira, M D Khoury, and D K Gulati. EHRT Inc., Cincinnati, OH.
- #1314 **THE EFFECT OF TEMPERATURE ON THE VOLATILIZATION OF ALKYLARSINES DURING POST-HYDRIDE GENERATION AS MONITORED BY MASS SPECTROMETRY.** D Y Shirachi, M S Smith, and P R Jones¹. Dept. of Physiology and Pharmacology, Chemistry Dept¹, University of the Pacific, Stockton, CA. Sponsor: S T Omaye.
- #1315 **ENVIRONMENTAL DEGRADATION OF A POLYACRYLAMIDE THICKENING AGENT.** E A Smith and F W Oehme. Comparative Toxicology Laboratories, College of Veterinary Medicine, Kansas State University, Manhattan, KS.
- #1316 **COMPARISON OF THE HEPATIC P450-INDUCING EFFECTS OF AROCLOR 1254 IN RATTUS NORVEGICUS, MUS MUSCULUS STRAIN B6C3F1 AND REITHRODONTOMYS FLUVESCENS.** R A Lubet, L E Beebe, S D Fox, H J Issaw, K McBee and R W Nims. LCC and CSAL, PRI/DynCorp, Inc., NCI-FCRDC, Frederick, MD, and Oklahoma State University, Stillwater, OK.
- #1317 **CHANGE OF PLASMA ESTRADIOL-17 β IN LAYING HENS IS A SENSITIVE INDICATOR OF THE REPRODUCTIVE EFFECT OF POLLUTANTS.** S W Chen, P J Dziuk, and B M Francis. Department of Animal Sciences and Institute for Environmental Studies, University of Illinois, Urbana, IL.
- #1318 **DIETARY ALUMINUM OR ACID-INHIBITION OF GROWTH AND INSULIN LIKE GROWTH FACTOR-I.** M C Capdevielle, C G Scanes. Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ. Sponsor: M A Gallo.
- #1319 **DEVELOPMENTAL PATTERNS OF PORPHYRIN PROFILES IN THE EUROPEAN STARLING (STURNUS VULGARIS).** J M Akins, M J Hooper, H A Davis and J S Woods. Environmental Toxicology Dept., Clemson Univ., Pendleton, SC, and Dept. of Environmental Health, Univ. of Washington, Seattle, WA.
- #1320 **USE OF AN AQUATIC MICROCOSM IN ASSESSING THE ENVIRONMENTAL SAFETY OF AN EXPERIMENTAL PESTICIDE.** P C Francis, P J Cocke and R D Meyerhoff. Toxicology Research Laboratories, Eli Lilly and Company, Greenfield, IN. Sponsor: M J Vodienik.

WEDNESDAY, FEBRUARY 26

2:00 p.m.-4:00 p.m.

CONVENTION CENTER-ROOM 613

FORUM FOR NEW INVESTIGATORS

Chairperson: Robert A. Roth, SOT Education Committee

The SOT Education Committee sponsors this forum for new investigators seeking funds for research and training. This year's program will include a brief summary of the NIH individual grants program, but will emphasize programs from other federal agencies. In addition, hints on preparing a proposal will be presented. The panel will include representatives from the U.S. Department of Agriculture, Air Force, Army, and the NIH Toxicology Study Section. Each will make a short presentation about funding opportunities, review mechanisms and/or grantsmanship before initiation of a question and answer session between the audience and panel members.

Presenters and Panel Members: Rosemary R. Grady, Acting Deputy Associate Administrator and Program Director, Office of Grants and Program Systems, National Research Initiative Competitive Grants Program, Cooperative State Research Service, U.S. Department of Agriculture; Jean V. Smith, Principal/Assistant Responsible for Contracting, U.S. Army Medical Research and Development Command; William Berry, AROSR/NL; William D. Atchison, Member of the NIH Toxicology Study Section, Department of Pharmacology and Toxicology, Institute for Environmental Toxicology, Michigan State University.

WEDNESDAY, FEBRUARY 26

5:30 p.m.-7:00 p.m.

Please check the calendar or the Sheraton Hotel lobby board for room assignments.

CHAPTER MEETINGS (EXCEPT PACIFIC NORTHWEST)

WEDNESDAY, FEBRUARY 26

7:00 p.m.-10:00 p.m.

SHERATON HOTEL-GRAND BALLROOM

ANNUAL BANQUET AND AWARDS PRESENTATION

Tickets are \$38 per person. Meeting registrants can sponsor and prepay for tables of 10. Registrants who purchase a table are able to choose their seating arrangement prior to the banquet by stopping by the SOT Headquarters office in the Juniper/Madrona Rooms by Noon on Tuesday. Requests will be honored on a first-come, first-served basis. Sorry, no refunds or exchanges.

THURSDAY MORNING, FEBRUARY 27
8:30 a.m.—11:30 a.m.
CONVENTION CENTER—BALLROOM 6A

SYMPOSIUM: ECOGENETICS: GENETIC SUSCEPTIBILITY TO ENVIRONMENTAL AGENTS

Sponsored by the Molecular Biology, Carcinogenesis, and Mechanisms Specialty Sections

Chairpersons: Elaine M. Faustman, and Lucio Costa, University of Washington, Seattle, WA

Ecogenetics, the study of genetic susceptibility to environmental agents has an important role in toxicological evaluation. Critical to our formulation of a cumulative dose-response relationship for the human population is individual susceptibility. Thus, this represents a major parameter in our characterization of such risks and has significant scientific regulatory and policy implications. Dramatic examples of the role that such genetic differences has played in defining toxicity can be seen with glucose-6-phosphate dehydrogenase deficiency and sensitivity to primaquine, acetylation differences and susceptibility to isoniazid; and arene oxide defects and diphenylhydanto in induced developmental toxicity. The purpose of this symposium is to focus our attention as toxicologists in this research direction and to provide an introduction to the genetic, biochemical and toxicologic systems under study in this active, interdisciplinary area of research. This symposium will emphasize the application of molecular biological approaches to identify these polymorphisms. It would serve to stimulate cross-disciplinary interests for toxicologists, epidemiologists and geneticists.

- #1321 8:30 **ECOGENETICS: GENETIC SUSCEPTIBILITY TO ENVIRONMENTAL AGENTS: INTRODUCTION.** *E M Faustman, L G Costa, A G Motulsky, and G S Omenn.* Departments of Environmental Health and Medical Genetics, Schools of Medicine and Public Health and Community Medicine, University of Washington, Seattle, WA.
- #1322 8:40 **N-ACETYLTRANSFERASES IN MAN.** *U A Meyer.* Department of Pharmacology, Biocenter of the University of Basel, Basel, Switzerland.
- #1323 9:15 **MOLECULAR TOXICOLOGY OF HUMAN MICROSOMAL EPOXIDE HYDROLASE: IMPLICATIONS FOR GENTIC EPIDEMIOLOGY.** *C J Omiecinski, L D Aicher, K B Robinson, H Checkoway, and C Hassett.* University of Washington, Seattle, WA.
- #1324 9:50 **HUMAN CYP1A1 AND CYP1A2 GENES: DIFFERENCES IN EXPRESSION ASSOCIATED WITH RISK OF TOXICITY AND CANCER.** *D W Nebert and D D Petersen.* Dept. Envir. Hlth., Univ. of Cincinnati Med. Center, Cincinnati, OH.
- #1325 10:25 **PARAOXONASE POLYMORPHISMS: ROLE IN DEFINING HUMAN SUSCEPTIBILITY TO ORGANOPHOSPHATES.** *B N LaDu, D Lipsig and S Adkins.* University of Michigan Medical School, Ann Arbor, MI.
- 11:10 **CONCLUSIONS/IMPLICATIONS.** Chaired by Dr. Gilbert S. Omenn, School of Public Health and Community Medicine, University of Washington, Seattle, WA.

THURSDAY MORNING, FEBRUARY 27
8:30 a.m.—11:30 a.m.
CONVENTION CENTER—BALLROOM 6C

SYMPOSIUM: IMPROVEMENTS IN QUANTITATIVE NONCANCER RISK ASSESSMENT

Chairpersons: Barbara D. Beck, Gradient Corporation, Cambridge, MA and Michael L. Dourson, USEPA, Cincinnati, OH

The present approach towards quantitative risk assessment of noncancer effects, as reflected in the Acceptable Daily Intake (ADI) or Reference Dose (RfD), often makes inadequate use of information on toxic mechanisms, on intra- or inter-species variability, and dose-response relationships. As a result, the quality of individual risk assessments varies among chemicals. The level of protectiveness is likely to be highly variable among different ADIs/RfDs and it is also difficult to quantify the significance of excess exposures. The purpose of this symposium is to describe efforts to improve the traditional process of noncancer risk assessment—basically the application of 10-fold Uncertainty Factors to a No Observed Adverse Effect Level. The first two presentations describe improvements to the standard approach for developing the ADI/RfD. The appropriateness of the typically used 10-fold Uncertainty Factor, in terms of pharmacokinetic differences, interspecies variability, intraspecies variability, and other factors will be reviewed. Next, the use of the benchmark dose as an alternative to the NOAEL to allow for the use of multiple data sets and to allow comparability among ADIs/RfDs will be discussed. The next two presentations will provide alternative approaches to the basic ADI/RfD approach. A ranking scheme that addresses severity of effect along with variability in both exposure level and exposure duration will be presented. Finally, a biologically based model for chloroform hepatotoxicity that incorporates information on pharmacokinetics and cytotoxicity in the mouse to derive risk estimates for humans will be described. It is expected that this symposium will be of interest to both regulatory toxicologists—who must develop protective levels—and experimental toxicologists—who need to design studies that are of use for quantitative risk assessment.

- #1326 8:30 **IMPROVEMENTS IN QUANTITATIVE NONCANCER RISK ASSESSMENT: INTRODUCTION.** *B D Beck and M L Dourson*¹. Gradient Corp., Cambridge, MA and US EPA, Cincinnati, OH.
- #1327 8:35 **REDUCING UNCERTAINTY WITH ADJUSTMENT FACTORS.** *D Hattis*¹ and *S Lewis*². Clark University, Worcester, MA¹ and Exxon Biomedical Sciences, East Millstone, NJ².
- #1328 9:15 **EXPOSURE-RESPONSE ANALYSIS: MODELING SEVERITY AS THE DEPENDENT VARIABLE AGAINST CONCENTRATION AND DURATION.** *D J Guth, R C Hertzberg and A M Jarabek.* Environmental Criteria and Assessment Office, US EPA, Cincinnati, OH.
- #1329 9:55 **ALTERNATIVES TO THE NOAEL/UF APPROACH FOR QUANTITATIVE NONCANCER RISK ASSESSMENT.** *C A Kimmel*¹ and *H Zenick*². US EPA, Office of Health and Environmental Assessment, Washington, DC¹ and Health Effects Research Laboratory, Research Triangle Park, NC².

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#1330 10:35 BIOLOGICALLY-BASED HUMAN RISK ASSESSMENT FOR CHLOROFORM HEPATOTOXICITY. *R B Conolly*. CIIT, Research Triangle Park, NC.

THURSDAY MORNING, FEBRUARY 27

8:30 a.m.—11:00 a.m.

CONVENTION CENTER—ROOM 607

PLATFORM SESSION: IMMUNOTOXICOLOGY II

Chairpersons: Norbert Kaminski, Medical College of Virginia, Richmond, VA and Marc Pallardy, Universite de Paris, Chatenay, Malabry, France

- #1331 8:30 **β 2-ADRENOCEPTOR STIMULATION INCREASES THE NUMBER OF ANTIGEN-SPECIFIC PRECURSOR B LYMPHOCYTES THAT DIFFERENTIATE INTO IgM-SECRETING CELLS WITHOUT AFFECTING BURST SIZE.** *V M Sanders* and *F E Powell-Oliver*. National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- #1332 8:45 **SCID MICE RECONSTITUTED WITH MURINE ANTIGEN-SPECIFIC T AND B LYMPHOCYTES: A POTENTIAL MODEL FOR THE STUDY OF INDIRECT MECHANISMS OF IMMUNE TOXICITY.** *F E Powell-Oliver*, *P L Pollock*, *A V Wagner*, and *V M Sanders*. National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- #1333 9:00 **EVALUATION OF THE IMMUNOGENICITY OF PEG-SOD IN BEAGLE DOGS AS DETERMINED BY ELISA.** *T K LaBrie*, *J B Cornacoff*, *Y Greener*, and *J Devin*. Sterling Research Group, Rensselaer, NY.
- #1334 9:15 **METHOXYACETALDEHYDE, AN INTERMEDIATE METABOLITE OF 2-METHOXYETHANOL, IS IMMUNOSUPPRESSIVE IN THE RAT.** *R J Smialowicz*, *M M Riddle*, *W C Williams*, *D L Andrews**, *R W Luebke*, and *C B Copeland*. U.S. EPA and *ManTech Inc., Research Triangle Park, NC.
- #1335 9:30 **INDUCTION OF APOPTOSIS-LIKE CELL DEATH BY 7,12-DIMETHYLBENZ(A)ANTHRACENE (DMBA) IN THE A20.1 MURINE B LYMPHOMA CELL LINE.** *S W Burchiel*, *D P Davis*, *S D Ray*, *S L Barton*, and *G B Corcoran*. The Univ. of New Mexico College of Pharmacy, Toxicology Program, Albuquerque, NM.
- #1336 9:45 **PROSPECTIVE IDENTIFICATION OF CHEMICAL RESPIRATORY ALLERGENS AS A FUNCTION OF SERUM IgE CONCENTRATION IN MICE.** *R J Dearman*, *D A Basketter** and *I Kimber*. ICI CTL, Macclesfield, UK. *ESL, Unilever Research and Engineering, Bedford, UK. Sponsor: *P M D Foster*
- #1337 10:00 **IMMUNOTOXIC EFFECTS OF THE COLOR ADDITIVE AMMONIA CARAMEL COLOR.** *G F Houben*, *H van Loveren*, *W Seinen*, and *A H Penninks*. Research Inst. of Toxicology, Univ. of Utrecht: TNO-Toxicology and Nutrition Inst., Zeist; Natl. Inst. of Public Health and Environmental Protection, Bilthoven, The Netherlands. Sponsor: *P J van Bladeren*.
- #1338 10:15 **EPIDERMAL LANGERHANS CELL MATURATION FOLLOWING CHEMICAL ALLERGEN INDUCED STIMULATION OF MIGRATION.** *M Cumberbatch*, *S W Peters* and *I Kimber*. ICI Central Toxicology Laboratory, Alderley Park, Macclesfield, UK. Sponsor: *P M D Foster*.
- #1339 10:30 **STIMULATION OF LANGERHANS CELL MIGRATION BY EPIDERMAL CYTOKINES.** *I Kimber* and *M Cumberbatch*. ICI Central Toxicology Laboratory, Alderley Park, Macclesfield, UK. Sponsor: *P M D Foster*.
- #1340 10:45 **MINIMAL CROSS-REACTIVITY OF ANTIBODIES TO TOLUENE DIISOCYANATE (TDI) WITH HEXAMETHYLENE DIISOCYANATE (HDI).** *R Jin* and *M H Karol*. Graduate School of Public Health, University of Pittsburgh, PA.

THURSDAY MORNING, FEBRUARY 27

8:30 a.m.—11:15 a.m.

CONVENTION CENTER—ROOM 608

PLATFORM SESSION: GLUTATHIONE CONJUGATES AND BIOACTIVATION

Chairperson: George B. Corcoran, University of New Mexico, Albuquerque, NM and Jacqueline H. Smith, Exxon Biomedical Sciences, East Millstone, NJ

- #1341 8:30 **HEPATIC CLEARANCE OF A GLUTATHIONE CONJUGATE BY BOTH γ -GLUTAMYLTRANSFERASE DEPENDENT AND INDEPENDENT MECHANISMS.** *C A Hinchman*, *A T Truong*, and *N Ballatori*. Dept. of Biophysics, University of Rochester School of Medicine, Rochester, NY.
- #1342 8:45 **THE ROLE OF RENAL N-ACETYLTTRANSFERASE IN THE METABOLISM OF HALOALKENES.** *G Birner*, *M Werner* and *W Dekant*. Institute of Toxicology, University of Wurzburg, FRG.
- #1343 9:00 **BRAIN UPTAKE AND METABOLISM OF S-(1,2-DICHLOROVINYL) GLUTATHIONE (DCVG) AND S-(1,2-DICHLOROVINYL)-L-CYSTEINE (DCVC).** *N Patel*, *J Fullone*, and *M W Anders*. Department of Pharmacology, University of Rochester, Rochester, NY.
- #1344 9:15 **NEPHROTOXICITY OF THE GLUTATHIONE AND CYSTEINE CONJUGATES OF 2-BROMO-2-CHLORO-1, 1-DIFLUOROTHYLENE, A METABOLITE OF HALOTHANE.** *M F Finkelstein¹*, *R B Baggs²*, and *M W Anders^{1,3}*. ¹Toxicology Training Program, ²Departments of Laboratory Animal Medicine and ³Pharmacology University of Rochester, Rochester, NY.
- #1345 9:30 **BIOACTIVATION MECHANISM OF S-(3-OXOPROPYL)-N-ACETYL-L-CYSTEINE (OPNAC) AND S-(3-OXOPROPYL)-N-ACETYL-L-CYSTEINE S-OXIDE (OPNACS).** *M Hasmi¹*, *S Vamvakas²*, and *M W Anders¹*. ¹Department of Pharmacology, University of Rochester, Rochester, NY, and ²Institut fur Toxikologie, Universitat Wurzburg, FRG.

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- #1346 9:45 **THE REACTION OF 3-NITROSONITROBENZENE WITH GLUTATHIONE.** M K Ellis, K Handley*, C Bleasdale*, B T Golding*, and P D M Foster. ICI Plc, Central Toxicology Laboratory, Alderley Park, Cheshire, UK; *Dept. of Chemistry, University of Newcastle upon Tyne, UK.
- #1347 10:00 **REGULATION OF CYSTEINE CONJUGATE B-LYASE IN RAT KIDNEY FOLLOWING EXPOSURE TO THE N-ACETYL CYS-TEINE CONJUGATE OF HEXACHLORO-1,3-BUTADIENE.** M MacFarlane, M A Schofield, L Roelandt, M David, P S Goldfarb, L J King, E A Lock* and G G Gibson. Molecular Toxicology Group, School of Biological Sciences, Univ. of Surrey, Guildford, UK; *Central Toxicology Laboratory, ICI plc, Alderley Park, Macclesfield, Cheshire, UK.
- #1348 10:15 **IN VIVO AND IN VITRO FORMATION OF SEVERAL S-CONJUGATES OF HYDROQUINONE.** H E Kleiner, B A Hill, T J Monks, and S S Lau. Div. of Pharm. Tox., College of Pharmacy, The Univ. of Texas at Austin, Austin, TX.
- #1349 10:30 **METABOLISM AND TOXICITY OF 2-(GLUTATHION-S-YL)HYDROQUINONE AND 2,3,5-(TRIGLUTATHION-S-YL)HYDROQUINONE IN THE IN SITU PERFUSED RAT KIDNEY.** B A Hill, T J Monks, and S S Lau. Div. of Pharmacology Toxicology, College of Pharmacy, The Univ. of Texas at Austin, Austin, TX.
- #1350 10:45 **γ -GLUTAMYL TRANSPEPTIDASE AND DIPEPTIDASE MEDIATED METABOLISM AND TOXICITY OF 2-BROMO-(GLUTATHION-S-YL)HYDROQUINONES IN LLC-PK₁ CELLS.** J J W M Mertens, S S Lau, and T J Monks. Division of Pharmacology and Toxicology, College of Pharmacy, The Univ. of Texas at Austin, Austin, TX.
- #1351 11:00 **METABOLISM AND TOXICITY OF 2-BROMO-3-(GLUTATHION-S-YL)HYDROQUINONE IN THE IN SITU PERFUSED RAT KIDNEY.** M J Rivera, L M Hinojosa, T J Monks, and S S Lau. Div. Pharm. Toxicol., College of Pharmacy, Univ. of Texas at Austin, Austin, TX.

**THURSDAY MORNING, FEBRUARY 27
CONVENTION CENTER—ROOM 605**

POSTER DISCUSSION SESSION: ADVANCES IN PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELS

Chairperson: Melvin E. Andersen, CIIT, Research Triangle Park, NC

Displayed: 8:30 a.m.—11:30 a.m.

Discussion: 9:30 a.m.—11:30 a.m.

- #1352 **INTERSPECIES EXTRAPOLATION OF THE DISPOSITION OF ETHYLENE OXIDE WITH A PHYSIOLOGICALLY BASED PHARMACOKINETIC (PBPK) MODEL.** K Krishnan, M L Gargas, T R Fennel, and M E Andersen. CIIT, RTP, NC.
- #1353 **PHYSIOLOGICALLY BASED PHARMACOKINETIC (PBPK) MODELING OF 1,1,1-TRICHLOROETHANE (TRI) TISSUE DISPOSITION IN RATS.** P Varkonyi, S Srivatsan, J V Bruckner, and J M Gallo*. Dept. of Pharmacology Toxicology and Dept. of Pharmaceutics*, University of Georgia, Athens, GA.
- #1354 **VALIDATION OF A PHYSIOLOGICALLY BASED PHARMACOKINETIC MODEL OF PERCHLOROETHYLENE IN RATS USING TISSUE CONCENTRATION-TIME DATA.** C E Dallas, P Varkonyi, X M Chen, S Muralidhara, and J M Gallo*. Depts. of Pharmacology Toxicology and *Pharmaceutics, College of Pharmacy, University of Georgia, Athens, GA.
- #1355 **PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) MODEL FOR TRICHLOROETHYLENE.** R D Stenner, M Templin, W F Elmquist, and R J Bull. Washington State University, Pullman, WA and Battelle Northwest, Richland, WA.
- #1356 **VARIABILITY OF PARTITION COEFFICIENTS AND ITS EFFECT ON PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODEL BEHAVIOR.** C S Seckel, C L Flemming and J M Gearhart. ManTech Environ. Tech., Dayton, OH. Sponsor: D E Dodd.
- #1357 **KINETIC CONSTANTS FOR BIOTRANSFORMATION REACTIONS OF VOLATILE ORGANIC CHEMICALS (VOCs): IN VIVO/IN VITRO COMPARISONS.** M L Gargas, and M E Andersen. CIIT, RTP, NC.
- #1358 **INVESTIGATION OF 1,3-BUTADIENE METABOLISM IN MONKEYS USING PHYSIOLOGICALLY BASED MODELS.** L J Shyr, T L Gilbert, A R Dahl, and R F Henderson. Inhalation Toxicology Research Institute, Albuquerque, NM.
- #1359 **PHYSIOLOGICALLY BASED PHARMACOKINETIC MODELING OF NAPHTHALENE TOXICITY INCORPORATING CIRCULATION OF REACTIVE METABOLITES.** L M Sweeney, M L Shuler and J G Babish. School of Chemical Engineering and the Department of Pharmacology, NYS College of Veterinary Medicine, Cornell University, Ithaca, NY.
- #1360 **IN VIVO AND IN VITRO KINETIC ANALYSIS OF FURAN BIOTRANSFORMATION BY F344 RATS.** G L Kedderis, J E Murphy, R Batra, S D Held, M A Carfagna, and M L Gargas. CIIT, RTP, NC.
- #1361 **PHYSIOLOGICALLY-BASED TOXICOKINETIC MODELING OF SOLUBLE URANIUM IN THE RAT.** M W Himmelstein and E J O'Flaherty. Dept. of Environmental Health, University of Cincinnati, Cincinnati, OH.

THURSDAY MORNING, FEBRUARY 27
CONVENTION CENTER—ROOM 609

POSTER DISCUSSION SESSION: APPROACHES TO NEUROTOXICITY SCREENING

Chairpersons: Hugh A. Tilson and Harold Zenick, USEPA, Research Triangle Park, NC

Displayed: 8:30 a.m.—11:30 a.m.
Discussion: 9:30 a.m.—11:30 a.m.

- #1362 **SCREENING FOR DEVELOPMENTAL NEUROTOXICANTS: POSSIBLE ALTERNATIVES TO EXISTING GUIDELINES.** *E S Goldey, M E Stanton, J P O'Callaghan and K M Crofton.* Neurotoxicology Division, US EPA, RTP, NC.
- #1363 **VALIDATION OF A DEVELOPMENTAL NEUROTOXICITY SCREEN IN RODENTS.** *M J Collier, P A McAnulty and J M Tesh.* Life Science Research Limited, Eye, Suffolk, UK. Sponsor: *D H Pullinger.*
- #1364 **PROFILES OF CHEMICAL EFFECTS USING A NEUROBEHAVIORAL SCREENING BATTERY.** *V C Moser,¹ B M Sumrell¹, and R C MacPhail².* ¹ManTech Environmental Technology and ²US EPA, RTP, NC.
- #1365 **A NEUROBEHAVIORAL VALIDATION STUDY IN THE CD RAT.** *J C Pettersen, E Chow, and C L Leahy.* Environmental Health Center, Agricultural Div., CIBA-GEIGY Corp., Farmington, CT.
- #1366 **NEUROTOXICITY SCREENING METHODS ARE SENSITIVE TO ENVIRONMENTAL DIFFERENCES.** *P J Spencer, J L Mattsson, K A Johnson, R R Albee.* The Toxicology Research Laboratory, Dow Chemical Co., Midland, MI.
- #1367 **POSITIVE CONTROL NEUROTOXICITY STUDIES FOR EPA (FIFRA) GUIDELINES.** *P C Beyroudy, K J Robinson and B R Broxup.* Bio-Research Laboratories Ltd., Senneville (Montreal), PQ, Canada.
- #1368 **VALIDATION OF A DEVELOPMENTAL NEUROTOXICITY SCREENING BATTERY: EFFECTS OF HYDROXYUREA, METHYLMERCURIC CHLORIDE AND DIPHENYLHYDANTOIN.** *K E Sloan, W R Richter, C S Auletta and I W Daly.* Bio/Dynamics, Inc., East Millstone, NJ.
- #1369 **COMPARISON OF PERFORMANCE FROM THREE CONTINENTS ON THE WHO-RECOMMENDED NEUROBEHAVIORAL CORE TEST BATTERY (NCTB).** *W K Anger, M G Cassitto, Y-X Liang, R Amador, J Hooisma, D W Chrislip, D Mergler, M Keifer, J Hoertnagl, L Fournier.* Oregon Health Science University, Portland, OR.
- #1370 **FUNCTIONAL INDICES SIMPLIFY STATISTICAL ANALYSIS OF THE FUNCTIONAL OBSERVATIONAL BATTERY (FOB).** *C L Hoe, R E Morrissey, and K A Soper.* Merck, West Point, PA.
- #1371 **STRAIN COMPARISONS OF THE EFFECTS OF DIISOPROPYL-FLUOROPHOSPHATE (DFP) IN RATS.** *C J Gordon, L Fogelson, J Farmer and R C MacPhail.* Neurotoxicology Division, US EPA, RTP, NC.

THURSDAY MORNING, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: COMMUNICATION/EDUCATION

Chairpersons: Michael A. Kamrin, Michigan State University, East Lansing, MI and Arthur L. Craigmill, UC Davis, Davis, CA

Displayed: 8:30 a.m.—11:30 a.m.
Attended: 8:30 a.m.—10:00 a.m.

- #1372 **ASSESSMENT OF ATSDR'S HEALTH EFFECTS LITERATURE INVENTORY AND DISSEMINATION PROGRAM.** *R S DeWoskin, L S Stewart, and J K Carpenter*.* Research Triangle Inst., Research Triangle Park, NC and *Agency for Toxic Substances and Disease Registry, Atlanta, GA. Sponsor: *R W Tyl.*
- #1373 **PROBLEM-BASED LEARNING—A TOOL TO ENHANCE TOXICOLOGY EDUCATION.** *J A Pickrell, F W Oehme and V L Clegg.* Comparative Toxicology Laboratories and Office Planning and Eval., Kansas State University, Manhattan, KS.
- #1374 **EVALUATION AND ASSESSMENT OF HOTLINE INFORMATION AND TECHNICAL ASSISTANCE.** *M L Marsh.* US EPA, Environmental Criteria and Assessment Office, Research Triangle Park, NC. Sponsor: *C R Shoaf.*
- #1375 **THE INTEGRATED RISK INFORMATION SYSTEM: ASSESSMENT DEVELOPMENT PROCESS AND OPPORTUNITIES FOR PUBLIC INPUT.** *J Patterson¹, and A Jarabek² and M Dourson¹.* U.S. Environmental Protection Agency, ¹Cincinnati, OH and ²Research Triangle Park, NC.
- #1376 **AN EXPERT DATABASE MANAGEMENT TOOL FOR BIOLOGICAL EFFECTS OF CHEMICALS.** *L A Cox¹, M G Bird², W Lampson, S J Wykoff.* ¹Cox Associates, Denver, CO; and ²Exxon Biomedical Sciences Inc., E. Millstone, NJ.
- #1377 **BENEFITS OF ISO-9000 SERIES REGISTRATION IN NON-CLINICAL STUDIES.** *E B Hobbs, C A Hunter and L S Schnoll.* I Corning Corporation, Midland, MI. Sponsor: *W H Siddiqui.*